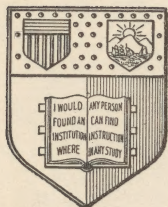


RY
W
3
4
5

N.Y.S.
COLLEGE OF
AGRICULTURE
C.U.



New York
State College of Agriculture
At Cornell University
Ithaca, N. Y.

Library

Cornell University Library

S 435.M34 1676

Cheap and good husbandry for the well-or



3 1924 003 233 560

mann, vauf

CHRISTIAN, 1830

HUSBANDRY,

FOR

The well-Ordering of all Beasts and Fowls,

and for the general Cure of their Diseases.

Containing the Nature, Breeding, Choice, Use, Feeding, and
Management of all manner of Cattle, as Horses, Oxen, Cows,
Sheep, Swine, and other Cattle.

The whole Art of Raising Great Hedges, with
the proper Use of them, and the Ordering of the same
for the Improvement, and the manner how to use them for the same.

And Rules for the Caring and Feeding of all kinds of
Fowls, with their proper Use, and the manner how to use them
for the Improvement, and the manner how to use them for the same.

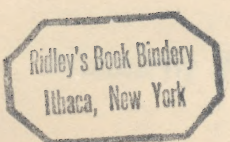
With the Life and Profit of Bees, the manner of
their Breeds, and the raising of all sorts of Fish.

Assembled for the general Good and Profit of the
World, by the most distinguished Experience from English
and Foreign, and the most celebrated Authors, and the
most celebrated, which will be a great benefit to all who
are concerned in the same, and in the raising of all sorts of
Fowls, and in the raising of all sorts of Fish.

The Thirteenth Edition.

LONDON,

Printed by George Routledge, at the Eldon
Press, in Strand, 1830.



CHEAP and GOOD

HUSBANDRY,

FOR

The well-Ordering of all Beasts and Fowls,
and for the general Cure of their Diseases.

Containing the Natures, Breeding, Choice, Use, Feeding, and
Curing of the Diseases of all manner of Cattel, as Horse, Oxe, Cow,
Sheep, Goats, Swine, and tame Conies.

Shewing further the whole Art of Riding Great Horses, with
the breaking and ordering of them, and the Dyeting of the Running,
Hunting, and Ambling Horse, and the manner how to use them in their Travel.

Also, approved Rules for the Cramming, and fattening all sorts of
Poultry, and Fowls, both tame and wild, &c. And divers good and well
approved Medicines, for the Cure of all the Diseases in Hawks, of what kind soever.

Together with the Use and Profit of Bees, the manner of
Fish-Ponds, and the taking of all sorts of Fish.

Gathered together for the general Good and Profit of the
Common-wealth, by exact and assured Experience from English pra-
ctices, both certain, easie, and cheap; differing from all former and for-
rain Experiments, which either agreed not with our Clime, or were too
hard to come by, or over-costly, and to little purpose; all which herein
are avoided. Newly Corrected and Enlarged with many Excellent
Additions.

The Thirteenth Edition.

LONDON,

Printed by E. H. for George Sawbridge, at the Bible
on Ludgate-Hill, 1676.

S
435
M34
1676

Went

172202

J EVERITT

1801

The Thirteenth Edition.
LONDON.
Printed by E. H. for George Sambrook, at the Bible
on Ludgate-Hill, 1876.



TO THE
RIGHT HONOURABLE,
AND
Most enobled with all inward, and
outward Vertues,
RICHARD SACKVILE,

Baron of Buckhurst, and Earl of Dorset, &c.

Although the monstrous shapes of Books (Right Honourable, and best enobled Lord) have, with their disguised and unprofitable Vizard-like faces, half scar'd even Virtue her self from that ancient Defence and Patronage, which in former ages most Nobly she employed, to preserve them from Envy: Yet so much I know, the largeness of your Worthy Brest is endued with Wisdome, Courage, and Bounty, that notwithstanding the vanities of our ignorant Writers, you will be pleased out of your Noble Spirit, favourably to behold whatsoever shall bring a publick good to our Countrey, at which end I have only aymed in this small Book: in which, though I have run far from the way or tract of other Writers in this nature, yet I doubt not but your Honour shall find my path more easie, more certain, and more safe than any, nay by much less difficult or dangerous to walk in. I must confesse, something in this nature I have formerly

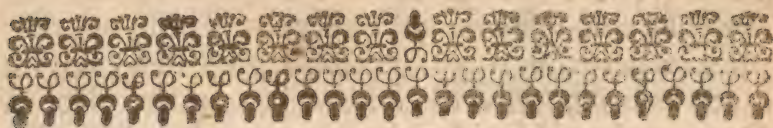
The Epistle Dedicatory.

formerly published, as namely of the Horse only, with whose Nature and Use I have been exercised and acquainted from my Childhood, and I hope, without boast, need not yield to any in this Kingdome: Yet in this Work, I hope your Lordship, and all other Princely maintainers of that worthy and serviceable Beast, shall find, I have found out, and herein explained, a nearer and more easie course for his preservation and health, than hath hitherto been found or practised by any but my self only: whatsoever it is, in all humbleness I offer it as a sacrifice of my Love and Service to your Honour, and will ever whilst I have breath to be

Your Honours

in all dutiful Service,

G. M.



TO THE

Courteous READER.

THERE is no Artift, or man of Induftry (Courteous and Gentle Reader) which mixeth Judgment with his Experience, but findeth in the travel of his Labours better and nearer courfes to make perfect the beauty of his work, than were at firft prefented to the eye of his knowledge: for the Mind being pre-occupied, and bufied with a virtuous fearch, is ever ready to catch hold of whatfoever can adorn or illuftrate the Excellency of the thing, in which it is employed; and hence it hapneth, that my felf, having ferioufly beftowed many years to find out the truth of thefe knowledges, of which I have treated in this Book, have now found out the infallible way of curing all difeafes in Cattle; which is by many degrees more certain, more eafie, lefs difficult, & without all manner of coft and extraordinary charges, than ever hath been published by any home-born or forrain practitioner. Wherein (friendly Reader) thou fhalt find that my whole drift is to help the needful in his moft want and extremity. For having many times in my journeying, feen poor and Rich-mens Cattel fall fuddenly fick, fome travelling by the way, fome drawing in the Plough or Draught, and fome upon other Employments;

ments ; I have also beheld those Cartel or Horses dye, ere they could be brought either to a Smith, or other places where they might receive Cure : Nay, if with much pains they have been brought to the place of Cure, yet have I seen Smiths so unprovided of Apothecaries Simples, that for want of a matter of six pence, a Beast hath died worth many Angels. To prevent this, I have found out those certain and approved Cures, wherein if every good Horse-lover, or Husbandman, will but acquaint his knowledge with a few Herbs, or common-Weeds, he shall be sure in every Field, Pasture, Meadow, or Land-furrows, nay almost by every high-way-side, or blind Ditch, to find that which shall preserve and keep his Horse from all suddain extremities. If thou shalt find benefit, think mine hours not ill wasted ; if thou shalt not have occasion to approve them, yet give them thy gentle passage to others, and think me, as I am,

Thy Friend,

G. M.

A



A Short Table expounding all the hard words in
this Book.

A

A *Uri-pigmentum*, or *Orpment*, is a yellow hard substance to be bought at the Apothecaries.

Aristolochia-longa, otherwise called *red Madder*, is an Herb growing almost in every field.

Aristolochia-rotunda, is the Herb called *Galingale*.

Agrimony, or *Egrimony*, is an usual and known Herb.

Ameos, *Comin royal*, is an Herb of some called *Bulwort*, *Bishops-weed*, or *Herb-William*.

Anise, is that Herb which bears *Anise-seeds*.

Aver, of some called *Dill*, is an Herb like *Fennel*, only the seeds are broad like *Orange-seed*.

Agnus-Castus, of some called *Tulesain*, is an Herb with reddish leaves, and sinewy, like *Plantane*.

Egyptiacum, is a Reddish *Unguent*, to be bought at the Apothecaries, and is soveraign for *Fistulaes*.

Assafetida, a stinking strong Gum, to be bought at the Apothecaries.

Adraces, or *Adarces*, is that *Salt* which is ingendred on the Marshes, by the violence of the Sun's heat after the tide is gone away.

Asterion, is an herb growing amongst stones, as on walls, or such likes; it appeareth by night, it hath yellow flowers like Fox-gloves, and the leaves are round and blewish.

Aloes, is a bitter Gum, to be bought at the Apothecaries.

B

B *Eten*, or *Beets*, is an Herb with long broad leaves indented, and grows in hedge-rows.

Bole-armenick, is a red hard earthly substance, to be bought at the Apothecaries, and is of a cold and binding nature.

B

Broom-

A Table of hard words.

Broomwort, is an Herb with brown coloured leaves, and beareth a blew flower, and most commonly grows in Woods.

C

Cresses, are of two kinds, *Water-cresses*, and *Land-Cresses*: they have broad smooth leaves, and the first grows in moist places, the later in Gardens, or by high-waies.

Comin, see *Ameos*.

Carthamus, is an Herb in taste like *Saffron*, and is called *bastard-Saffron*, or *Mock-Saffron*.

Calamint, is an ordinary Herb, and groweth by Ditches sides, by high-waies, and sometimes in Gardens.

Coriander, is an Herb which beareth a round little seed.

Chives, are a small round Herb growing in Gardens, like little young *Onions*, or *Scallions*, not above a week old.

D

Diapente, a soveraign powder made of five equal simples, as *Bay-berries*, *Ivory*, *Aristolochia-rotunda*, *Myrrhe*, and *Gentiana*, may be bought of the Apothecary.

Betony, is an Herb called *Pepper-wort*, or *Horse-radish*, and grows in many open fields.

Dragon, is an Herb common in every Garden.

E

Elicampne, is an Herb of some called *Horse-helm*, and grows almost in every field, and every Garden.

Eye-bright, is an Herb common in every Meadows.

F

Fenugreek, is an Herb which hath a long slender trailing stalk, hollow within, and sown in Gardens, but easiest to be had at the Apothecaries.

Fernsimund, is an Herb of some called *Water Fern*, hath a triangular stalk, and is like *Polypody*, and it grows in Bogs and low grounds.

G

Galingale, see *Aristolochia-rotunda*.

H

Horse-mint, is an Herb that grows by water sides, and is called *Water-mint*, or *Brook-mint*.

Horse-Helm, see *Elicampne*.

House-leek, is a weed which grows upon the tops of houses that are thatcht, and are like unto a small *Hartichoke*.

Hearb Robert, hath leaves like *Hearb Bennet*, and small flowers of purple colour, and grows in most common fields and Gardens.

I

Ivory, is the shaving of the *Elephants* tooth, or the old *Harts* or *Stags* horn, being the smooth white thereof.

K

Not-grass, is a long round weed, with little round smooth leaves, and the stalks very knotty and rough, winding and wreathing one seam into another very confusedly, and groweth for the most part in very moist places.

L

Lettuce, is a common sallet in every Garden.

Lollum, is that weed which we call *Cockel*, and groweth amongst the corn in every field.

Liverwort, is a common Herb in every garden.

M

Mayb, is a Weed that grows among corn, and is called of some *Hogs-fennel*.

Myrrbe, is a Gum to be bought at the Apothecaries.

Man-drake, is an Herb which grows in gardens, and beareth certain yellow Apples, from whence the Apothecaries draw a soveraign Oil for broken bones.

N

Nepe, see *Calamint*.

O

Oreganum, is an Herb called *Wild-Marjerom*, and grows both in open fields, or in low Copfes.

Orifice, is the mouth, hole, or open passage of any wound or ulcer.

Opoponax, a Drug usual to be bought at the Apothecaries.

P

Pitch of *Burgundy*, is *Rosen*, and the blacker the better.

Plantane, is a fat leaf and finewy, growing close to the ground, and it is called *Whay-bred* leaf.

Plol-roral, is an Herb that groweth both in fields and gardens, and is best when it flowreth.

A Table of hard words.

Patch-grease, it is that tallow which is gotten from the boiling of Shoo-makers threads.

Q^Q*Uingue-folio*, of some called *Cinque-foile*, is that Herb which is called *Five-leaved Grass*.

R^R*Ed-Oker*, is a hard red stone, which we call *Raddle*, *Orell*, *Marking-stone*.

S^S*elendine*, or *Tetterwort*, is a Weed growing in the bottome of Hedges, which being broke, a yellow jaice will drop and run out of it.

Shermit, is an Herb with many small leaves, and grows most in Gardens.

Stubwore, is an Herb which grows in woody places, and is called *Wood Sorrel*.

Sanguis Draconis, is a hard red Gum to be bought at the Apothecaries.

Sperma Ceti, is the seed of the *Whale*, excellent for inward bruises, and to be bought at the Apothecaries.

Stoncrop, is a green Weed growing on the tops of walls.

Sal-armoniack, is a Drug to be bought at the Apothecaries.

T^T*Ussilaginis*, is that Weed which we call *Celtis-foot*.
Triapharmacon, a composition made of three simples, and to be bought at the Apothecaries.

Turn-merick, is a yellow Simple: of strong savour, to be bought at the Apothecaries.

V^V*erdigrease*, is a green fatty Gum drawn from Copper; and is to be bought at the Apothecaries.

W^W*ood-rose*, or *Wild Eglantine*, is that small thin flower which grows upon Briars in Woods or Hedges.

Y^Y*arrow*, is an Herb called the *Water Violet*, and grows in Lakes or Marish grounds.



THE GENERALL CURE AND ORDER-
 ing of all Horses : As also the whole Art of Riding great
 Horses ; with the breeding, breaking, and ordering
 of them : Together with the manner how to
 use the running, hunting, and ambling
 Horse, before, in, and after their
 Travel.

CHAP. I.

Of the Horse in general, his choice for every several Use, his Ordering, Diet, and best preservation for health, both in Travel, and in Rest.

THE full scope and purpose of this work, is in few, plain, and most undoubted true words to shew the Cure of all manner of diseases belonging to all manner of necessary Cattel, nourished and preserved for the use of man, making by way of demonstration, so easie and plain a passage, to the understanding and accomplishment of the same, that not the simplest which hath priviledge to be esteemed no Idiot; nor the poorest, if he can make two shillings; but shall both understand how to profit himself by the Book, and at the cheapest rate purchase all the receipts and simples declared in the whole Volume. For in sober truth this Book is fit for every Gentleman, Husbandman, and good mans pocket, being a memory which a man carrying about him will, when he is call'd to account, give a man full satisfaction, whether it be in the Field, in the Town, or any other place where a man is most unprovided.

And now forasmuch as the Horse of all Creatures is the noblest, strongest, and aptest to do a man the best and worthiest services both in Peace and Warre, I think it not amiss first to
 Nature of Horses.
 begin

begin with him. Therefore of his nature in general : he is valiant, strong, and nimble, and above all other beasts most apt and able to indure the extreamest labours, the moist quality of his composition being such, that neither extream heat doth dry up his strength, nor the violence of cold, freeze the warm temper of his moving spirits; but that where there is any temperate government, there he withstandeth all effects of sickness, with an uncontroled constancy. He is most gentle and loving to the Man, apt to be taught and not forgetful when an impression is fixed in his brain. He is watchful above all other beasts, and will endure his labour with the most empty stomach; he is naturally given to much cleanliness, is of an excellent scent, and offended with nothing so much as evil favours.

The choice of
Horses, and
their shapes.

Now for the choice of the best Horse, it is divers, according to the use for which you will employ him. If therefore you would have a Horse for the Warres, you shall chuse him that is of a good tall stature, with a comely lean head, an out swelling forehead, a large sparkling eye, the white whereof is covered with the eyebrows, and not at all discerned, or if at all, yet the least is best; a small thin ear short and pricking; if it be long, well carried and ever moving, it is tolerable; but if dull or hanging, most hateful: a deep neck, large crest broad brest, bending ribs, broad and streight chine, round and full bottock, with his huckle-bones hid, a tayle high and broad, set on neither too thick, nor too thin; for too much hair shews sloath, and too little, too much choller and heat: a full swelling thigh, a broad, flat, and lean leg, short pastern'd, strong joynted, and hollow bones, of which the long is best, if they be not wic'd, and the broad round the worst.

Colours of
Horses.

The best colours are Brown-bay, Daple-gray, Roan, Bright-bay, Black, with a white near foot behind, white far foot before, white rache, or white star, Chesnut or Sorrel, with any of those marks, or Dun with a black list: And of these horses, for the Wars, the Courser of Naples is accounted the best, then the *Almain*, the *Sardinian*, or the *French*.

Horses for a
Princes Seat.

If you would chuse a Horse for a Princes Seat, any supream Magi-

Magistrate, or for any great Lady of State, or woman of eminence, you shall chuse him that is of the finest shape, the best rein, who naturally bears his head in the best place, without the help of the mans hand; that is of nimblest and easiest pace, gentle to get upon, bold without making affrights, and most familiar and quiet in the company of other Horses: his colour would ever be milk-white, with red frains, or without, or else fair dapple gray with white Mane, and white Tayle: And of these the *English* is best, then the *Hungarian*, the *Swedish*, the *Pollish*, the *Irish*.

If you will chuse a Horse only for travel, ever the better shape Horses for Travel. the better hope, especially look that his head be lean, eyes swelling outward, his neck well risen, his chine well risen, his joynts very strong; but above all his patterns short and straight, without bending in his going, and exceeding hollow and tough hoofs: let him be of a temperate nature, neither too furious, nor too dull, willing to go without forcing, and not desirous to run when there is no occasion.

If you would chuse a Horse for hunting, let his shape in general be strong, and well knit together, making equal proportions; Hunting Horses. for as unequal shape shew weakness, so equal members assure strength and indurance. Your unequal shapes are a great head to a little neck, a big body to a thin buttock, a large limb to a little foot, or any of these contraries, or where any member suits not with the whole proportion of the body, or with any limb next adjoining. Above all let your hunting Horse have a large lean head, wide nostrils, open chauld, a big weasand, and the wind-pipe straight, loose, well covered, and not bent in the pride of his Reining: The English Horse, bastardized with any of the former Races first spoke of, is of all the best.

If you chuse a Horse for running, let him have all the finest Running Horse. shape that may be, but above all things, let him be nimble quick and fiery, apt to fly with the least motion; long shapes are sufferable, for though they shew weakness, yet they assure sudden speed. And the best Horse for this use, is the *Arabian*, *Barbary*, or his bastard, Jennets are good, but the Turks are better;

Coach-Horse.

If you will chuse a Horse for the Coach, which is called the swift draught, let his shape be tall, broad, and well furnisht, not grosse with much flesh, but with the bignesse of his bones, especially look if he have a strong neck, a broad breast, a large chine, sound clean limbs, and tough hooves: and for this purpose, your large English Geldings are best, your Flemish Mares next, and your strong Ston'd Horses tolerable, *Flemish* or *Frisons*.

Pack-horses.

If you will chuse a Horse for Portage, that is for the Pack or Hampers, chuse him that is exceeding strong of Body and Limbs, but not tall, with a broad back, out ribs, full shoulders and thick withers; for if he be thin in that part, you shall hardly keep his back from galling: be sure that he take a strong stride with his feet, for their pace being neither trot nor amble, but only a foot pace, he which takes the largest strides goes at the most ease, and rides his ground fastest.

Cart-horses.

Lastly, if you will chuse a Horse for the Cart or Plough, which is the slow draught, chuse him of the most ordinary height, for Horses in the Cart unequally sorted, never draw at ease, but the tall hang up the low Horse. Let them be of good strong portion, big breasted, large bodied, and strong limb'd, by nature rather inclin'd to crave the whip, than to draw more than is needful. And for this purpose Mares are most profitable; for besides, the effecting of your work, they yearly bring forth increase: therefore if you furnish your draught with Mares to breed, observe in any wise, to have them fair fore-handed, that is good neck, breast, and shoulders; for the rest it is not so regardful, only let her bodily be large; for the bigger room a Foal hath in the dams belly, the fairer are his members. And above all things observe never to put your draught beasts to the Saddle, for that alters their pace, and hurts them in their labours.

Of Mares.

Now for the ordering of these several Horses: first for the Horse for service, during the time of his teaching, which is out of the Wars, you shall keep him high and lustily; his food, no Straw but good Hay, his provender clean dry Oats, or two parts Oats, and one part Beans, or Pease, well dried and hard, the quantity of half a peck at watering, morning, noon, and evening, is sufficient.

In his dayes of rest, you shall dress him betwixt five and six in the morning, water betwixt seven and eight, and feed from nine till after eleven. In the afternoon, you shall dress betwixt three and four, water betwixt four and five, and give provender till six, then litter at eight, and give food for all night. The night before he is ridden, you shall at nine of the clock at night take away his hay from him; at four of the clock in the morning give him a handful or two of Oats, which being eaten, turn him upon his Snaffle, rub all his body and legs over with dry cloths, then saddle him, and make him fit for his exercise. Soon as he is call'd for to be ridden, wash his Bit in fair water, and put it into his mouth with all other things necessary, draw up his girths, and see that no buckles hurt him: then lead him forth, and as soon as he hath been ridden, all sweating as he is, lead him into the stable, and first rub him quickly over with dry wisps, then take off his saddle, and having rubb'd him all over with dry cloaths, put on his housing-cloath, then set on the Saddle again, and girt it: then lead him forth, and walk him up and down in gentle manner an hour or more, till he be cold, then set him up, and after two or three hours fasting, turn him to his meat: then in the afternoon, curb, rub, and dress him, then water him, and order him as is aforesaid.

For ordering of the Horse for a Prince, or great Ladies seat, *Ordering of
let it be in his time of rest like unto the horse for service: and in his
time of labour like the travelling horse, as shall be shewed instantly:* *Horses for a
Princes seat.* only because he is to be more choicely kept, I mean in the beautifullest manner, his coat lying smooth, and shining, and his whole body without any stain or ill-favouredness; you shall ever when he hath been ridden, and cometh in much sweating, presently have him into the Stable, and first rub him down with clean wisps, then taking off his Saddle, with a Sword-blade whose edge is rebated; you shall stroak his neck and body clean over, leaving no sweat nor filth that can be gotten out; then cloath him up, and set on the Saddle, and walk him forth as aforesaid. After, order and diet him as you do other travelling Horses: dry Oats is his best Provender if he be fat and full, and Oats and beans if he be poor, or subject to loose his flesh quickly.

*Ordering of
travelling hor-
ses.*

For your travelling Horse, you shall feed him with the finest

C

Hay

hay in the Winter, and the sweetest grass in Summer. His Provender will be dry Oats, Beans, Pease or bread, according to his stomach: in the time of rest, half a peck at a watering is sufficient; in the time of his labour as much as he will eat with a good stomach. When you travel, water him two hours before you ride; then rub, dress, and lastly feed: then bridle up, and let him stand an hour before you take his back. Travel moderately in the morning till his wind be rackt, and his limbs warmed, then after do as your affairs require. Be sure at night to water your horse two miles before you come to your journeys end, then the warmer you bring him to his Inn, the better: walk not, nor wash not at all, the one doth beget colds, the other foundring in the feet or body: but set him up warm, well stopt, and soundly rub'd with clean litter. Give no meat whilst the outward parts of your horse are hot or wet with sweat, as the ear-roots, the flanks, the neck, or under his chaps: but being dry, rub and feed him according to the goodness of his stomach. Change of food begetteth a stomach, so doth the washing of the tongue or nostrils with vinegar, wine and salt, or warm urine. Stop not your horses forefeet with Cows dung, till he be sufficiently cold, and that the blood and humours which were dispersed, be settled into their proper places. Look well to his back, that the saddle hurt not, to the girths that they gall not, and to his shooes that they be large, fast, and easie.

Ordering of
hunting horses.

For the ordering of your Hunting-Horse, let him in the time of his rest have all the quietness that may be, much litter, much meat and much dressing, water ever by him, and leave him to sleep as long as he pleaseth. Keep him to dung rather soft than hard, and look that it be well coloured, and bright, for darkness shews grease, and redness inward heating. After exercises, let mashes of sweet mault be his usual scourings; and let bread of clean beans, or beans and wheat equall mixt, be his best food, and beans and oats the most ordinary.

Ordering of
running horses.

For the ordering of your running Horse, let him have no more meat than to suffice nature, drink once in four and twenty hours, and dressing every day once at Noon only. Let him have much moderate exercise, as Morning and Evening Airings, or the fetching of his water, and know no violence but in his courses only.

Let

Let him stand dark and warm, have many cloaths, and much litter, being wheat-straw only. If he be very fat, scour oft; if of reasonable state, scour seldom; if lean, then scour but with a sweet mash only. Be sure your horse be empty before he course, and let his food be the finest, lightest, and quickest of digestion that may be: the sweats are more wholsom that are given abroad, and the cooling most natural which is given before he come into the stable. Keep his limbs with cool ointments, and by no means let any hot spices come into his body. If he grow dry inwardly, wash'd meat is very wholsom. If he grow loose, then give him straw in more abundance. Burning of sweet perfume in the stable is wholsom, and any thing you either do about your horse, or give unto your horse, the more neat, cleanly, and sweet it is, the better it nourisheth.

For ordering the Coach horse, let him have good dressing twice a day, Hay and Provender his belly full, and Litter enough to tumble on, and he cannot chuse but prosper. Let him be walkt and wash't after travel, for by reason of their many occasions to stand still, they must be inur'd to all hardness, though it be much unwholsom. Their best food is sweet Hay, and well dried Beans and Oats, or Bean-bread. Look well to the strength of their shooes, and the galling of their harness. Keep their legs clean, especially about the hinder feet-locks, and when they are in the house, let them stand warm clothed.

For the ordering of the Pack-horse, or the Cart-horse, they need no washing, walking, or hours of fasting; onely dress them well, look to their shooes and backs, and then fill their bellies, and they will do their labour. The best food is sweet Hay, Chaff, or Pease, or Oat-hulls and Pease, or chopt Straw and Pease mixt together; once a week to give them warm Grains and Salt, is not amiss, for their labour will prevent the breeding of worms, or such like mischiefs.

Now for the general preservation of horses health, it is good whilst a horse is in youth and strength to let him blood twice in the year, that is, beginning of the Spring, & beginning of the Fall, when you may best afford him a weeks rest. After you have let him blood, two dayes after give him a comfortable drench, as 2 spoonfuls of *Diapente*, or such like, which is called, *Horse-Misbride*.

date, in a quart of strong Ale. Use oft to perfume his head with Frankincense, and in the heat of Summer use oft to swim him. Let a fat Horse drink oft, and a little at once, and a lean Horse whentoever he hath appetite. Much rubbing is comfortable, and cheareth every member. Be sure to let your Horse eat grass once in a year, for that cooleth the blood, scours away gross humours, and gives great strength and nourishment to the body. If notwithstanding all these principles your Horse fall into sickness and disease, then look into the Chapters following, and you shall find the truest, best approved, and the most familiar medicines for all manner of infirmities, that ever were known or published except my *Master-piece*.

CH A P. II.

*Of Riding in general, and of the particular Knowledges
belonging to the Art of Riding of a great
Horse, or Horse for Service,*

HAVING spoken something already of Horses, it now follows, we say something of the commendable exercise of riding great Horses, which in the very action it self speaketh Gentleman, to all that are performers or doers of the same. And though our English Gentry from a sloath in their industry, aim for the most part at no more skill than the riding of a ridden and perfect Horse, which is but only the setting forth of another mans vertue, and thereby making themselves richer in discourse than action: yet our English Husbandman, or good-man, whom I seek to make exact, and perfect in all things, shall not only recreate himself by Riding the Horses whom the other men have made perfect, but shall by his own practise bring his Horse from utter ignorance, to the best skill that can be desired in his motions: wherein he shall find a two-fold pleasure, the one an excellent contentment to his mind, that he can perform so worthy an action, without the chargeable assistance of others, and the other a healthful support to his body, when by such recreation his
spirits

The pleasure of
riding.

Spirits and inward faculties are revived and inflamed.

But now me thinks, I hear some say, that I have utterly taken away the tune of this string, I have stricken so oft upon it, and that indeed there can be no delight where there is no variation : and that surely I cannot vary any more upon this plain Song, but the world would find discord either in this, or my former def-cants. But let them not deceive themselves, for my building standeth on a firm Rock, and I know both shall be worthily justifi-able : only this I must inform all men, that in times past, long since, when our first rules of Horsemanship were given unto us, our Masters were not so skilful in the abilities of Horse-performances as we are, but measur'd them by the proportions of their own weaker natures, and thence became so too much tender over them, that they respected neither the greatness of their own labours, nor the length of time before they arrived to their desires, so in the end they might aspire to their wishes with safety and full satisfaction : whence it comes to pass, that in those times, and even now in these, chiefly among those which are meerly Riders, and no Keepers, there is no less time allowed to the making of a perfect Horse, than two years ; when we know, and my self from Experience can justify the same, that if the Rider can Keep as well as Ride, that is, give as well directions for the preservation of a Horses health, and the avoidance of Sorances and sickness, as put in practice artfully, every violence to be used in his Lessons, he may very well make up a perfect Horse in three months, fit either for pleasure or battel, which is the full scope and end of this Treatise : wherein I would not have any man expect either new Rules, or contradiction of any already set down by men of practice, and knowledge in the Art, but only a straightning or drawing of them together into a much narrower compass, giving satisfaction to our desires, and finishing up our work with speed, which before was almost lost or neglected with the length of our labours, as you shall fully perceive by this discourse which followeth.

First then, to speak of the taming of a young Colt, which is as it were the preface or introduction to the art of Riding; you shall after he hath been in the house a week or a fortnight, and is familiar with the man, and will withall patiently indure cur-rying.

The Riders Apology.

The taming of a young Colt.

His saddling and
bridling.

rying, combing, rubbing, clawing and handling in every part and member of his body, without any shew of rebellion or knavishness, which you shall compass by all gentle and easie means, doing nothing about him suddenly or rashly, but with leisure and moderation. Then you shall offer him a Saddle, which you shall set in the manger before him, that he may smell to it, and look upon it, and you shall gingle the girths and stirrops about his ears, to make him careless of the noise, then with all gentleness after you have rubb'd his sides therewithall, you shall set it on his back, and gird it gently on, and then place his Crooper with all ease, which done, you shall take a sweet watring trench, wash'd, and anointed with honey and salt, and put it into his mouth, placing it to hang directly about his tush, and as it were a little leaning thereupon: this you shall do in the morning as soon as you have drest him, and then thus saddled and bridled, you shall lead him forth, and water him in your hand abroad: then bringing him in, and after he hath stood a little reined upon his trench an hour or more, take away the bridle and saddle, and let him go to his meat till the evening: then lead him forth as before with the saddle to the water, then when he is set up gently, take off his saddle and cherish him, and then drest him, and cloath him up for all night.

The first back-
ing.

The next day saddle and bridle him as before said, and put on him a strong musrole of writhen Iron, or a sharp Cavezan and Martingal, which you shall buckle at such length, that he may no more but feel it when he jerketh up his head, and then lead him forth into some new plowed field, or soft ground; and there after you have made him trot a good space about in your hand, and thereby taken away from him all his wantonness and knavish distractions, you shall offer your foot to the stirrop; at which if he shew any distaste either in body or countenance, you shall then course him about again, then offer again, and with leisure rise half way up, and go down again; at which if he shrink, correct him as before, but if he take it patiently, then cherish him, and so mount into the Saddle, which done, after cherishing light down again, and give him bread or grass to eat: then look that your Girths be well girted and streight, that the Crooper be strong and of just length, that the Bridle hang even and in his due place,

with-

without inward or outward offence, that your stirrups be fit, and generally all things, without offence either to your self or to the beast, and then as before, mount his back, seat your self just and even in the Saddle, make the reins of your Bridle of equal length, carry your rod without offence to his eye in your right hand, the point either directly upright, or thwarted towards your left shoulder: then having cherishd him, let the Groom which before led him, having his hand on the Chaff-halter, lead him forward a dozen or twenty paces, then gently straining your hand, with the help of the Foot-man make him stand still, then cherish him, and lead him forward again, and do this five or six times one after another, till by continual use you make him of your own accord, (without the foot-mans help) by giving your body, and thrusting your legs forward, go forward; which as soon as he doth, you shall stay him, and cherish him, and then sitting on his back, let your foot-man lead him home, and bring him to the block, where after you have cherishd him, you shall gently alight, and cause him to be set up, and well drest, and meated. The next day you shall bring him forth as before, and in all points, take his back, as aforesaid, and so by the help of the foot-man, trot fore-right half a mile at least; then let the foot-man lay off his hand, and walk by him, till you have of your self trotted him forth another half mile, then cherish him, and make the foot-man give him some grafs or bread to eat, and then taking a large compass, trot him home, and bring him to the block as before, and there alight, and so set him up.

The third day let your foot-man light upon some fair Jade, and then bringing your Colt to the block, take his back gently, and after you have cherishd him, the other riding before you, follow him forth-right a mile, ever and anon at the end of twenty or thirty score stopping the Colt gently, cherishing him, and making him yeild, and go back a step or two, and then putting him forward again, till he be so perfect, that with the least motion he will go forward, stop and retire, which will be effected in two days more; in which space if he chance at any time to strike or rebel, you shall make him which rides before you, take the spare Reyn, an lead him forward, whilst you give him two or three good lashes under the belly, and then being in his way, take the spare

spare reyn to your self again : and thus you shall do, till all faults be amended : then you shall spare your Horseman, or Guide, and onely by your self for three or four dayes more, trot him every morning and afternoon, at least a mile or two forward, using him onely to stop or retire, and bringing him home a contrary way to that you went forth, till he be so perfect and willing, that he will take his way, how or in what manner your self pleaseth, ever observing to mount and dismount at the block only, except some special occasion constrain you to the contrary.

This you may very well bring to pass the first week of the Horses riding.

The three
main points of
a Horsemans
skill.

As soon as you see your Horse will receive you to his back, trot fore-right, stop, and retire, and do all this with great patience and obedience; you shall then call into your mind the three main points of a Horsemans knowledge, which are helps, corrections, and cherishings. And for helps, they consist in these: first the voice, which soundeth sharply and cheerfully, crying, *via*, *bow*, *hey*, and such like, adds a spirit and liveness to the Horse, and lends a great help to all his motions: then the bridle, which restrained, or at liberty, helps him how to do, and shews which way to do.

Then the Rod, which being only shewed, is a help to direct; being only moved, helps the quickness and nimbleness of the motion; and being gently toucht withal, helps the looffness of a Horses salts and leaps, and makes him as it were gather all his strength into one point; and lastly, the calves of the legs, stirrop-Leathers, and stirrops, which moved by the horses side, helps him to the nimbleness, swiftness, and readiness in turning. Some to these helps adde the help of the Spur, chiefly in high salts or boundings, but it must be done in a just and true time, and with such gentle bitterness, that the Horse may understand it for a help, or else he will take distaste, and finding it savour like correction, in stead of bettering his doings do with more disorder, as to spraul with his fore-feet in advancing, to yerk out with one or both his hinder feet in the corveit or bounding, shaking of his head and such like, as will appear in practise.

Of Correc-
tions, and which
they be.

Now of Corrections, the most principal is the Spur, which must

must not at any time be given triflingly or itchingly, but soundly and sharply, as oft as just occasion shall require: then the Rod which upon disorder, sloth or miscarriage of the members, must be given also soundly: then the voyce which being delivered sharply and roughly, as *ba villain, carridro, diablo*, and such like threatnings terrifieth the Horse, and maketh him afraid to disobey: And lastly, the Bridle which now and then stricken with a hard check in his Mouth, reformeth many vices and distemperatures of his Head: yet this last must be done seldome, and with great discretion; for to make a Custome thereof, is the ready way to spoyle a Horses Mouth.

Now of Cherishings, there are generally in use but three, as Of cherishing. first the voyce, which being delivered smoothly and lovingly, as crying, *holl a so boy, there boy there*, and such like, gives the Horse both cheerfulness of Spirit, and a knowledge that he hath done well; then the hand by clapping him gently on the Neck or Bu tock, or giving him Grass, or other Food to eat, after he hath pl as'd you: and lastly the big end of the Rod, by rubbing him therewith upon the withers or maine, which is very pleasing and delightfull to the Horse.

Now after these ordinary and usual helps, corrections, and cherishings, you shall have respect to the Musrole or Cavezen & Martingale, which carry in them all the three former both several and unite, for it is first an especial help and guide to every well disposed Horse, for setting of his head in a true place, forming of his Rein, and making him appear comely and gallant in the Eyes of the beholders; then it is a sharp correction when a Horse yerketh out his Nose, or disordereth his Head any way, or striveth to plunge or run away with his Rider: And lastly, it is a great cherishing unto the Beast, when he yieldeth his Head to your hand, by shrinking from his Face, and so leaving any more to torment him, but when he offendeth: whence it comes that more from this than any thing else, the Horse first gaineth the knowledge of his Masters will, and is desirous to perform it: therefore you shall be very carefull to the placing of this upon the Horse; as first that it hang somewhat low, and rest upon the tender Grissel of the Horses Nose, whereby corrections may be the sharper when occasion require it; then that it be loose

Of the Musrole and Martingale.

and not straight, whereby the Horse may feel, upon the yielding in of his Head how the offence goeth from him, and so know that only his own disorder is his own punishment. Lastly, he shall be carefull to note how he winneth the Horses Head, and those degrees to draw his Martingale straiter and straiter, so as the Horse may ever have a gentle feeling of the same, and no more; till his Head and Rein be brought to that perfection that you desire, and then there to stay, and keep the Martingale constantly in that place only, which you shall perform in those few days which you trot your Horse forth-right, being before you bring him to any Lesson, more then the knowledge of yourself, and how to receive you to his back, and trot forth obediently with you.

Of treading
the large ring.

Choice of
ground.

When your Horse is brought unto some certainty of Rein, will trot forth-right with you at your pleasure, & by your former exercise therein is brought to breath and delight in his travell, which will grow and encrease upon him, as you grow and encrease in your labour, then you shall bring him to the treading forth of the large Rings in this manner: First, if he be of heavy and sluggish nature, and sloathful and dull, and albeit he have strength and sufficiency of Body, yet you find him slovenly and unapt, then you shall trot him in some new plowed field, soft and deep: But if he be of quick and of a fiery Spirit, apt, nimble, and ready to learn, then you shall trot him in some sandy or gravelly place, where is strong and firm foot hold; and there you shall mark out a spacious large Ring, at least threescore or fourscore paces in compass, and having walked him six or seven times about the same on your right hand, you shall then by a little straitening of your right Rein, and laying the Calf of your left Leg to his side making a half circle within your Ring upon your right hand, down to the center or mid-point thereof, and then by straitning of your left Rein a little; and laying the Calf of your right Leg to his side, making another half circle to your left hand from the center to the outmost verge, which two half circles contrary turned, will make a perfect Roman S. within the Ring; then keeping your first large circumference, walk your Horse about on your left hand, as oft as you did on your right, and then change within your Ring as you did before to your right hand again, and then trot him first

on.

on the right hand, then on the left, so long as you shall think convenient, and although our ancient Masters in this Art have prescribed unto us certain numbers of Ring turns, and how oft it is meet to go about on either hand, as if all Horses were of one even ability; yet I would wish you neglect those Rules, and only to practise your Horse in this Lesson, according to his strength of his Body, sometimes applying him therein an hour, sometimes two, and sometimes three, more or less according to your discretion: for the space of time can neither bring weariness nor tiring: and for your change of hands, you shall do it as oft as shall seem best to your self, being ever very carefull to give him the most exercise, and that hand on which he is ever most unwilling to go; and in this Lesson be careful also that he do it cheerfully, lustily, nimbly, quickning and inflaming his Spirits by all means possible, and when you find that he will trot his large Rings perfectly, which will questionless be in less then a weeks space, being well applied therein, for you must not fore-slow any morning except the Sabbath, hardly any afternoon also, if you find him sloathful and heavy, for there is no greater hinderance then the Riders too much tenderness, nor no greater furtherance then a continual moderate exercise. Therefore as I said when he will trot his Rings well, then in the same manner, and with the same changes, you shall make him gallop the same Rings, which he shall do also with great dexterity, lightness, and much nimbleness, without losing the least part or grace of his best Rein: Nay, so careful you shall be thereof, that in his gallopping, you shall as it were gather his body together, and make his Rein rather better then it was, and make him take up his Feet so truly and loftily, that not any Eye may see or perceive a falshood in his stroke, but that his inward Feet play before his outward, and each of a side follow the other so directly, that his gallop may appear as the best grace of all his motions: neither shall you enter him into this Lesson rashly and hastily, but soberly, and with discretion, making him first gallop a quarter of the Ring, then half, then three parts, and lastly the whole Ring: neither shall you force him into his Ring with violence or the sharpness of Spurs, but with spirit and Mettal, making him by the lightness and cheerfulness of your own Body,

Of Galloping
large Rings.

pass of his own accord into his gallop, and especially in his changes, where you may let him feel your Legge, and shew him your Rod on the contrary side : and herein is to be noted, that continually those changes (in as much as they are made in a much straighter compass) must be done ever with great quickness, and more stirring nimbleness then entire lessons.

Helps in the
large Ring-
turns.

Now for the helps necessary in these large Ring-turns, they consist generally in the *Voice*, *Rod*, *Calves* of your Legs, and the *Bridle* : In the *Voice* by quickning him up, and reviving his Spirits when he grows sloathful, with these words, *How hey*, or *viz* : In the *Rod*, by shewing it him on the contrary side, or laying it on the contrary Shoulder, and sometimes by shaking it over his Head, which is a kind of threatning, chiefly when you make you changes. In the *Calves* of your Legs, when you clap them hard to the contrary side to which he turneth, or springing and jerking your Legs forward, hard upon your Stirrop leathers, which will quicken him and make him gather up his Limbs better than the spur by many degrees: And lastly, in the *Bridle*, by drawing it in a little straiter, and holding it with some more constancy, when you put any of your former helps in use, or do any thing with more life or courage, for that maketh him draw his Limbs together, and so straiten his Rings with gracefully comeliness.

Corrections in
the Ring-
turns.

For the Corrections in these large Rings, they be divers ; as namely, the *Bridle*, the *Spur*, and the *Rod*, and sometimes the *voice*, yet that but seldome; for the *Bridle*, you shall correct your Horse therewith if he carry his Head or Chaps awry, making as it were Mouths and ill-favoured countenances, giving him now and then a little check in the Mouth, and awaking him from such forgetful passions, or now and then drawing the trench to and fro in his Mouth, which will reform the error ; then the *Spur* which must be laid sharp and hard to his sides, when you find your helps will do no good, but that his sloath rather more and more encreaseth, or when he presseth and hangeth hard upon your hand or looseth the tutch of his rein, or such like vices ; for the *Rod*, when you find that he neglecteth the shewing or shaking of it, or when he disordereth any of his hinder parts and will not gather them up comely together, then you shall therewith give him a sound lash or two under the Belly, or over the contrary Shoulder, and to any of these former Corrections

you

you shall ever accompany the threatning of your voyce, when the fault is too much foul, and no otherwife, because there should be ever entire love betwixt the Horse and the Horse-man which continually chiding will either take away or at least root out the apprehension thereof.

Now for your Cherishings, they are those which I formerly spake of; only they must be used at no time but when your Horse doth well, and hath pleased your mind, both with his cunning and tractableness: although the time for the same be when he hath finished his Lessons, yet there is a secret pleasing and cherishing of a Horse with the Bridle, which must be exercised in the doing of his Lessons, and that is the sweetning of his Mouth by a little ceasing of your Bridle hand, and gently drawing it up back again, letting it come and go with such unperceiving motion, that none but the Beast may know it.

Cherishings
in his Ring-
turns.

When your Horse can trot and gallop your large Rings with all perfectness, which with good industry will be perfected in less than a fortnights exercise, you shall then proceed to make him stop fair, comely, and without danger, which you shall do in this manner: First, as soon as you have taken his back, cherish him, put him gently forward, and bring him into a swift trot: after you have trotted him forty or threescore yards forward, you shall by drawing in your Bridle hand straitly and suddenly, make him gather his hinder Legs and fore-Legs together, and so in an instant stand still, which as soon as he doth, immediately you shall ease your hand a little, yet not so much as may give him liberty to press forward, but rather to yield backward, which if you find he doth, you shall give him more liberty, and cherish him, and then having paused a while, draw in your Bridle-hand, and make him go back two or three paces, at which if he strike, instantly ease your hand, and draw it up again, letting him come and go till hee yeild and go backward, which (for the most part) all Horses at the first will do: but if it be that your Horse rebel and will not go back with this gentle admonition, you shall then cause a Footman standing by to put him back with his hand, and in this motion, you shall cherish him, that he may understand what your will is. And thus every time you make him stop, you shall make him retire back, till in one space of time you have made both

Of stopping
and going
back.

Lessons:

Lessons perfect : and this practise you shall use both till you come to your large Rings, and at every time that you finish your Lesson, or give the Horse breath or ease, whereby you shall perceive that your Horse shall learn to trot and gallop the large Rings, to stop and retire back all in one space of time, because you see succellively they follow one another, and are to be done (though three) but as one entire Lesson.

Helps.

Now for the helps in these Lessons, the best for stopping is the choice of ground, as by making your Horse ever to stop down the slope of some hill, or descending ground, whereby he may be compell'd to couch his hinder loyns the better, and so make him stop most comely, and to observe that the ground be firm and hard, without danger of sliding, lest the Horse finding such an imperfection grow fearful, and so refuse to do your will out of his own danger. In retiring you shall help him with your Rod, by putting it before his Brest, or shaking it before his Knees, to make him remove his Feet more quick and nimbly.

Corrections.

For Corrections in stopping, it must sometimes be done by your self, as with the even stroke of your Spurs, when in his stop he disordered his Head, or with any one single Spur, when he casteth out his hinder loyns, and will not stop right in an even line ; and sometimes it must be done by another by-stander, where he refuseth to stop at all, who standing at the place of stop, as soon as you draw up your hand, shall with his Rod threaten the Horse and make him not dare to press forward, or if he do press forward, to make him retire swiftly back so much ground as he gained, both your self and the by-stander, rating him with your voices extreamly : for corrections in retiring, they are the even strokes of both your Spurs, when he sticks or presses upon your hand, and will not yeild back ; and also your Rod struck sharply on his Knees and Brest, and Rod of a by-stander struck upon his Brest, Knees and Face, when his stubbornness is too violent.

Cherishings.

But for his cherishings, they be all formerly spoke of, when your will is comely and obediently performed, besides the addition of some other, as a present easing of your Bridle hand, and the suffering and cherishing of the by-stander, and so offering him to stand and recover breath a good space after.

When

When your Horse can stop and retire well, which may be done *Of advancing before.* in the same space that you teach him his large Ring turns, for it is as it were three Lessons learn'd in one; you shall then teach him to advance before when he stoppeth, which is very comely and graceful to the beholders; and you shall do it in this manner. After you have stopped your Horse, without giving your hand any ease you shall lay the Calves of both your Legs hard to his sides, and add thereto the noise of the shaking of your Rod, and your voice, by crying *up, up*, which will at first (peradventure) but a little amaze him, because he understandeth not your meaning: Therefore you shall put him forward again, and do as before, and that with a little more strength, continuing the practise of the same till you perceive hee taketh one Foot from the earth, then cherish him a little, and so to the Lessons again, till hee taketh up both his Legs from the ground, which when he doth, orderly or disorderly, yet cherish him exceedingly, that he may come to the knowledge of your meaning, without which all your labour is lost; then to your former practise again, till you have brought him to that perfectness, that he will with all readiness advance as oft as you will give him the Calves of your Legs to his sides, be it less or more times together: this done, you shall look to the orderly and comeliness of his advancing: As first, that he takes up his Legs both even together, and bend him inward towards his Body; then that he advance not too high (for fear of coming over upon you) but couch his hinder loyns close to the ground; then that he spraueth not, nor paweth with his Feet forward; and lastly that hee advance not for his own pleasure, but when you command him by your own direct and orderly motions, for the contrary is a foul fault in Horsemanship.

For helps in this Lesson, they are the Calves of your Legs, the shaking of your Rod over his Head, and your voyce, as is before said, and the descent of some hanging ground, which will make his hinder loyns couch the better.

The Corrections are according to the nature of offences, as *Corrections.* the even stroke of your Spurs, or a good lash with your Rod, when you see, he fixeth his Feet to the ground, and stubbornly applies himself to disobey you, or will take up his Feet one after another,

then, and not both together. If he do advance too high, so as he is ready to come over upon you, or if he sprauke or paw forth with his feet, you shall not then only give him both your spurs hard together, but also a good jerke or two with your Rod between his ears: but if he advance when you would not have him, you shall then in the same instant jerke him over both the knees with your Rod; and if he advance again, jerke him again, not ceasing till he fix his feet to the ground, or go backward, and then cherish him.

Cherishings.

For particulars cherishing in this Lesson, they are no other than those former spoke of, onely they must be done with a more ready watchfulness, in the very instant and moment of time, in which he performeth any thing well, that the Horse may understand why, and wherefore he receiveth such contentment, and thereby be encouraged to continue in his goodness, and be more ready to apprehend his Riders pleasure.

*The use of
advancing.*

For the use of advancing, it is twofold; as namely, to give a grace to his other Lessons, and to bring his Body to nimbleness: yet for the most part it is only us'd at the stop; where when you have finish'd any Lesson, if then concluding with the stop, you make him advance, once, twice or thrice, it will be both a grace to the Beast, and shew much art in the Horseman: also it maketh a Horse apt and ready to turn well, and making him trust to his hinder Legs, whereby his fore parts may be directed and governed at the Horsemans pleasure.

*Of yerking
behind.*

Next to advancing, you shall teach your Horse to yerke behind, in this manner: When at any time you have made him stop you shall presently with your Rod give him a good jerk under the Belly near to his flanke, which though at the first hee apprehended not, yet by a continuall and constant use thereof you shall in the end bring him to yerke out his hinder Legs; at the first doing whereof, you shall cherish him, for that is the only language by which he knoweth he doth your will, and then having paused a little, make him to do it again, encreasing it every day, and doubling his doings, till he be so ready, that when you please to give the jerke, he will then give the yerke, and then you shall look to the comeliness of his doings, that is to say, that he yerke not out his hinder-Legs, till his fore leg be above the ground

ground, then that he yerke not one Leg farther out than the other, but both even together; then that he yerke not too high, and lastly, that he yerke not one Leg out whilst the other is on the ground, all which are errors of great grossness. Therefore to make the Horse more perfect in this Lesson, it shall be good to teach him to yerke out behind, when he standeth in the stable, by jerking him on the buttocks with your Rod, and not ceasing to molest him till he raise up his rump above the ground, and then to cherish him, and so to apply him without any ease and rest, till he doth your will; then when he is perfect to put the same in practise when you are in the field on his back, by turning your Rod in your hand to his Buttock-ward, and touching him therewith, to make him yerke as aforesaid.

For the helps, they are the constant staying of his mouth on the **Helps.** Bridle, the stroke of your Rod under his belly, or the gentle touching him upon the Rump with the same.

The corrections are only the even stroak of your Spurs, when **Corrections.** either he refuseth to yerke, or yerketh out disorderly, or out of malice; or the single Spur on that side on which he yerketh out most disorderly: and lastly, a restless holding of him to the Lesson, not giving him any rest or ease, till he doth in that manner which you can wish.

Then for his cherishings, they are all those formerly mentioned, being bestowed upon him in the very instant of his well doing. **Cherishings.**

When your Horse is perfect in all the Lessons formerly spoke **Of Turnings.** of, and understandeth the helps and corrections belonging to the same, you shall then teach him to turn readily on both hands, by straitning his large Rings, and bringing them into a much less compass, and although among Horsemen, and in the Art of Horsemanship, there are divers and sundry turns, some high and lofty, as the turn upon the *Corvet*, *Capriole*, or on bounds, some close and neer the ground, as the turn *Tarra*, *Tarra*, or those we call *Caragolo*, *Serpegiare*, and such like; and some swift and flying, as the *Incavellere*, *Chambetta*, and such like; yet sith they all labour but to one end, which is to bring an horse to an exact swiftness and readines in turning, I will in as brief and plain manner as I can, shew you how to compass the same. First, therefore, you shall make out a Ring, some three or four yards in compass

pass and in the same, with all gentleness a while, walk your Horse, suffering him to go the same at his own pleasure, gathering his head up by little and little, and making him take pleasure in the same, till you find that he taketh knowledge of the Ring, and will with all willingness make about the same, coveting rather to straiten it, than enlarge it, which perceived, you shall then carry your Bridle-hand constant, and somewhat strait, yet the outmost Rein ever somewhat more strait than the inmost, making the Horse rather look from the Ring than into the Ring, and the calf of your leg (as occasion shall serve) somewhat near to the outward side of the Horse, and then you shall trot him about the Ring first on the one side, and then on the other, making your changes within that strait Ring, as you did before within the large Ring.

In this sort without ceasing, you shall exercise your Horse a full hour together, then stop him, make him advance twice or thrice together, then retire in an even Line, and so stand still a pretty while and cherish him; then when he hath taken fresh breath to him again, and do as before, continually labouring by raising up his Bridle-hand, and thrusting forward your Legs and Body, to bring his trot to all the swiftness and loftiness that may be, and your changes to do them so readily and roundly as may be: also making him to lap his outmost Leg so much over his inmost Leg, that he may cover it more than a foot over, and thus you shall exercise him a whole forenoon at least a week together, only doing his former Lessons but once over in a morning and no more, and in this practise you teach him perfectly three Lessons together, that is the turn, *Terra, Terra*, the *Incavalere*, and the *Chambletta*: the turn *Terra, Terra*, in the outmost circle of the strait Ring, and the *Incavalere* and *Chambletta* in the changes, wherein he is forc'd to lap one leg over another, or else to lift up the inmost leg from the ground, while he brings the outmost over it: and surely in this Ring and these changes consisteth the main art of turning, and the chiefest glory both of the Horse and the Horseman: and therefore it is meet for every Rider to think his Lesson not perfectly learnt, and therefore continually to practise his Horse in the same, making him not onely tread and trot these narrow Rings, but also gallop them, and from galloping

gallopping them to pass them about in ground-salts, as by taking up his Fore-legs from the ground both together, and bringing his hinder feet into their place, and so pissing the Ring about once, or twice, or thrice at your pleasure, or as oft as the Horses strength and courage will allow: and this is the true turn, called *Terra, Terra*, and of greatest request with Horsemen, and likewise with Souldiers; and this will every Horse naturally and easily be brought unto, onely by a continual trotting and gallopping of these narrow Rings. Thus you see the perfectness of your large Rings, brings your Horse to an easie use of the strait Rings; and the easie knowledge of the strait Rings brings a Horse to the perfection of turning, which is the grand and main summe of this Art; a stopping begets retiring, and retiring advancing. Thus every Lesson as it were a chain, is linkt one to another.

The helps belonging to turning, are all whatsoever are formerly spoken of, because it is a Lesson, which besides that it contains in it self all other Lessons, so it must be done with more courage, Art, and nimbleness, than any Art whatsoever; and therefore the Horse had need of all assistance that can possibly be given him. Helps.

The corrections are the Spurs given on the outmost side, when the Horse sticks, and is harder to come about on the one side than on the other, and the Rod striken hard on the outmost side of the offending member, as also a continual labour, when the Horse shews either unwillingness or disobedience touching the unnimbleness of his turning, when he beats one leg against another, or treads one foot upon another, the raps and hurts he doth himself, are sufficient corrections, and will both make him know his fault, and amend it. Corrections.

For his Cherishings, they are also the former already spoken of, yet to be used (if possibly) with greater earnestness, in as much as this Lesson being most cunning, would for the performance thereof ever receive the most comfort. Cherishings.

Your Horse being brought to this perfection, that he will perfectly tread his large Rings stop, retire, advance before, yerk behind, and turn readily on either hand, you shall then take away his Mussole and Trench, and in stead thereof put upon his Head a gentle Cavezan, or two joynts and three pieces, with a

chap-band underneath, which you shall buckle close, but not straight, and be sure that the Cavezan lye upon the tender gristle of the Horses Nose, somewhat near to the upper part of his Nostrils; then to the chap-band you shall fasten the Martingale, and lastly to the rings on each side the Cavezan you shall fasten long divided reins, more than a yard and a half in length apiece, then into his mouth you shall put a sweet smooth Cannon bit, with a plain watering chain, the cheek being of a large size, so it may arm a little above the point of his shoulder; and the kirble shall be thick, round, and large, hanging loosely upon his neither lip, and inticing the Horse with his lip to play with the same. Thus armed you shall take his back, and casting the left rein of your cavezan over the horses right shoulder, you shall bear it with your thumb, with the reins of the bit in your left hand; and the right reins of the cavezan you shall cast over the Horses left shoulder, and bear it with your Rod in your right hand, and so trot him forth the first morning outright a mile or two in the high way, making him only feel and grow acquainted with the bit, and only making him now and then stop and retire, and gathering up his head in a due place, and fashioning his rein with all the beauty and comeliness that may be: which done, the next day you shall bring him to his large Rings, and as was before shewed, there make him perfect with the bit as you did with the snaffle, first in trotting, then in galloping of the same, then make him stop, retire, advance, yerk behind, and come upon their hand with a great deal more perfectness, and more grace than was formerly done with the trench, which is an easie labour, in as much as the bit is as much better command, and brings more comeliness to the Horses motions, is also a greater help, a sharper correction, and cherisher of more comfort than any before used. And thus in the first moneth you may make any Horse perfect upon the trene in the Lessons before spoke of, so in the second moneth you may make the same Lessons a great deal more perfect upon the bit, and so presume in two moneths to have a perfect ground Horse, fit either for Souldier or Scholar, that hath any good rules of Horseman-ship in him.

Of the turning
off.

Now for as much as the Art in turning in Horses is of great difficulty, and ought of all Lessons to be most elaborate, I will speak.

ſpeak a little further thereof, and ſhew you the practice of theſe preſent times, for the beſt accompliſhment of the ſame, without ſtirring up evil motions in the Horſe, whence Reſtiveneneſs, and other vile errors do grow; for it is certain, that every Horſe naturally deſireth neither offence, nor to offend; but the raſh diſcretions of ignorant horſemen, which will compell a horſe to do, before he know what, or how to do, is the begetting of thoſe evils which are hardly or ever reclaimed; for a horſe is like an ill-brought-up boy, who having learnt drunkenneſs in his youth, will hardly be ſober in his age, and having once got a knaviſh quality, though he be never ſo much puniſhed for the ſame, will yet now and then ſhew that the remembrance is not utterly extinguished; and for as much as in this Leſſon of ſtrait turns, there is ſo much curious hardneſs that a horſe is moſt ſubject to rebel, and learn many evils thereby, therefore to prevent all thoſe evils, you ſhall cauſe a ſmooth ſtrong Poſt to be well ramm'd, and fixed in the earth in the miſt of the ſtrait Ring, at the very point and center thereof, then cauſing a Foot-man to ſtand at the Poſt, you ſhall give him the right rein of your Cavezin, which you ſhall make him hold about the Poſt, and ſo walk or trot your horſe about the ſame on your right hand as long as you pleaſe; then taking up the right Rein, give him up the left Rein, and do as much upon the left hand, and thus change from hand to hand, as oft as you ſhall think convenient, till you have brought your horſe to the abſolute perfection of every turn, the Poſt being ſuch a guide and bound unto the horſe, that albeit the horſeman were of himſelf utterly ignorant, yet it is impoſſible the horſe ſhould either diſorder or diſobey the Riders purpoſe.

When your horſe can thus perfectly for every ſeveral turn Of managing, either ſtrait, or open with his bit, you ſhall then teach him to manage, which is the only poſture for the uſe of the Sword on horſeback, and you ſhall do it in this manner. Firſt, cauſe ſome by-ſtander to prick up in the earth two riding Rods, about twenty or forty yards or more, as you think good; diſtant one from the other; then walk your horſe in a ſtrait turn or Ring about the firſt on your right hand, and ſo paſſing him in an even furrow down to the other Rod, walk about it alſo in a nar-

row Ring on your left hand, then thrust him into a gentle gallop down the even furrow, till you come to the first Rod, and there making him (as it were) stop, and advance without any pause or intermission of time; thrust him forward again, beat the turn *Terra, Terra*, about on your right hand, then gallop forth-right to the other Rod, and in the same manner beat the Turn about on your left hand; and thus do as oft as you shall think it convenient for your own practice, and the Horses strength.

Diversities of
Manages.

Now of these manages, our ancient Masters in Horsemanship have made divers kinds, as manage with rest, and manage without rest, manage with single turns, and manage with double turns, which indeed doth rather breed confusion, than understanding in either the Horse or Horseman: Therefore for your better knowledge, I will reduce them only but to two kinds, that is, Manage open, and Manage close: your open Manage, is that which I shewed you before, when you turn *Terra, Terra*, which is the most open of all strait turns: and your close Manage, is when you turn upon the *Incavalere*, or *Chambetta*, which are the closest of all turns, and may be done as before I shewed in a flying manner, even upon one foot, which although it be artful, yet it is not so glorious and safe for the Souldiers practice; only, this you may be most assured of, that when a Horse can manage upon both these turns, he may manage without more instruction upon any other turn whatsoever.

Of the Career.

When your Horse is perfect in the manages before said, you may then pass a *Career* at your pleasure, which is to run your Horse forth-right at his full speed, and then making him stop quickly, suddenly, firm and close on his Buttock: in which Lesson there needeth little instructions, but only some few observations, as first, that you make not your *Career* too long, whereby the Horse may be weakened; or too short, whereby his true wind and courage may be undiscover'd, but competent and indifferent, as about four or fivescore yards at the most: then that you start him gently without a fright: and lastly, that you first give him a little warning with your Bridle-hand, and then stop him firmly and strongly; which place of stop, if it be a little bending downwards, it is a great deal the better. And thus in these Lessons already shewed you, consisteth all the full perfection

fection of a Horse for service in the Wars, which any painful man may bring his Horse well unto, in less than three months: however our Ancients in former times have been blind, and in the same practice have wasted two years, ere they brought it to perfection.

Now forasmuch as to the Art of riding belongeth divers other Salts and Leaps, right pleasant and curious to behold; and though not generally used in the Wars, yet not utterly useless for the same; and sith they are many times very needful for the health of man's body, I will by no means abridge our English Husband-man of the same, but proceed to the Lessons, which are meet for Horses of pleasure, of which the first is to make a Horse bound aloft with all his four feet from the ground, and you shall do it in this manner. When you have trotted your Horse forth right a dozen or twenty yards, you shall stop him, and when he hath advanced once or twice, you shall a little straiten your Bridle-hand, and then give him the even stroke of both your Spurs together hard, which at first will but only quicken and amaze him, but doing it again and again, it will breed other thoughts in him, and he being of spirit and metal (as it is lost labour to offer to teach a Jade such motions) he will presently gather up his body, and either rise little or much from the ground, and presently cherish him, and after some rest, offer him the like again, and thus do till you have made him bound twice or thrice, then make much of him, and do no more for that day; the next day renew his Lesson again, and double his exercise, increasing so day by day, till he come to that perfection, that he will bound whensoever your Spurs shall command him.

When your Horse can bound perfectly, then you shall teach him the Corvet in this manner: you shall at the corner where two walls joyn together, a little hollow the ground a Horses length or more, and then place a smooth strong Post by the side of the hollowness of a horses length likewise from the wall; then over against the Post fasten an Iron-ring in the wall; this done, ride your Horse into the hollow place, and fasten one of the Reys of the Cavezan unto the Ring, and the other about the Post, then after you have cherished your Horse, make him advance

advance, by the help of your Calves of your Legs only twice or thrice together ; then let him stand still and cherish him, then make him to advance again at least a dozen times together, then rest, and after advance twenty or forty times together, daily increasing his advancements as he grows perfect therein, till you perceive that he hath got such a habit therein that he will by no means press forward, but keeping his ground certain, advance both before and behind of an equal height, and keep one just and certain time with the motions of your Legs, neither doing slower nor faster, but all after one manner and leisure : but if you find that he doth not raise his hinder parts high enough, then you shall cause a Footman to stand by you, and as you make him advance before, so the Footman by jerking him gently upon his hinder fillets with his Rod to raise up his hinder parts also ; this will bring your Horse in few dayes to a perfect and brave Corvet, so that after you may do it in any place where you please without the help either of Wall or Post, or other by-stander.

Of the Gallop
Galliard.

When your Horse is made perfect in the Corvet, and that he will do it readily and comely, you shall at the end of every third or fourth advancing give him the stroak of your Spurs, and make him bound aloft, then put him to his Corvet again as before, and then make him bound again ; and thus at the end of every third advancing, see you make him bound for the length of a Tilt-bar, or an ordinary managing furrow, according to the Horses strength, and this is called the *Gallop galliard*, which if it be taught a Horse along by the side of some wall or smooth Pale, it is so much the better, and a great deal fewer disorders will rise and trouble the Rider.

Of the Capri-
ole.

The next Lesson you shall teach your Horse after the Gallop galliard is the *Capriole* or Goats-leap, which is the same manner of motion which the Corvet is, only it is to be done forward, and much ground gained in the Salt, and the Horse is to raise his hinder parts as high, or rather higher than his fore-parts, and to keep rather a swifter than slower time in doing of it ; therefore when you teach your Horse to do it, you shall bring him into some hollow furrow, where the ground is a little descending, and turning his Head to the descent, put him into the Corvet temperate and gently, then when you give him the Calves of your
Legs :

legs to raise up his fore parts, in the same instant jerk your leg violently forward again, that he may not stick, but carry his hinder-legs after his fore-legs, and let some skilful foot-man standing by your side, jerk the horse over the fillets with his rod, and make him raise up his hinder parts; and thus do without ceasing, till he perform your will nimbly and cunningly, and then forget not to cherish him, and give him all comfort possible. And this lesson and the other which consist of violent and quick faults or leaps, would ever be practised the first in the morning whilst a Horse is fresh and lusty, for to put him to them after his fire-edge is taken away, will but bring him to a loathing of his instruction, or at best to do them but slovenly, heavily, and unwillingly.

There is also another motion which is pleasing to the eye, Of going aside. though it be very laboursome to the body, which is to make a Horse go side-long of which hand soever the Rider is disposed, and is very necessary in the wars, because it is the avoiding of any blow coming from the Enemy. This motion when you intend to teach your Horse, you shall draw up your bridle hand somewhat strait, and if you determine to have him go aside to your right hand, lay your left Rein close to his neck, and the calve of your left leg close to his side, and as you did in the *Incarulere*, making him lap or put his left leg over his right, then turning your Rod backward, and jerking him gently on the left hinder thigh, make him bring his hinder parts to the Right side also, and stand in an even line as at the first, then make him remove his fore-parts more than before, so that he may stand, as it were, cross over the even line, and then make him bring his hinder parts after, and stand in an even line again, and thus do, till by long practise he will move his fore parts and hinder parts both together, and go side-long as farre as you please, then cherish him, and if you will have him go towards your left hand, do as you did before, using all your helps and corrections on the right side only. And thus much I think is sufficient to have spoke touching all the several Lessons meet to be taught to any Horse whatsoever, whether he be for service or for pleasure, and which being performed artificially, carefully, and with patience, you may presume your Horse is compleat and per-

perfect, the rather sith no man can find out any invention, or teach any other motion to a Horse, which may be good and comely; but you shall easily perceive, that they are received from some one of these already rehearsed.

Riding before
a Prince.

Now if you shall be called to Ride before a Prince, you must not observe the liberty of your own will; but the state of the person before whom you Ride, and the grace of the horse which you ride; and therefore being come into the riding place, you shall chuse your ground, so that the Person before whom you are to ride may stand in the midst thereof, so as he may well behold both the passage of the Horse to him and from him: then being seated in a comely order, and every ornament about you handsome and decent, you shall put your Horse gently forth into a comely trot, and being come against the Person of state, bow your body down to the crest of your Horse, then raising your self again, pass half a score yards beyond him, and there marking out a narrow Ring, thrust your Horse into a gentle gallop, and give him two or three managing turns, in as short ground as may be, to shew his nimbleness and readinesse: then upon the last turn, his face being toward the great person, stop him comely and close, and make him to advance twice or thrice; then having taken breath, put him into a gallop galliard, and so pass along the length of the even furrow with that salt, making him to do it also round about the Ring; then his face being towards the Prince, stop him and give him fresh breath, then thrust him into the Capriole, now and then making him jerk out behind, yet so as it may be perceived it is your will, and not the Horses malice; and having gone about the Ring with that salt, and his face brought to look upon the Prince, stop him again and give him breath: then drawing nearer to the Prince, you shall beat the turn Terra Terra, first in a pretty large compass, then by small degrees straitning it a little and a little, draw it to the very center where you may give two or three close flying turns, and then changing your hands undoe all that you did before, till you come to the Rings first largeness, then the Horses face being direct upon the Prince stop him, and put him into a corvet, and in that motion hold him a pretty space, making him to do it first in an even line, first to the right hand, then to the left, now backward

Of the Car-
golo.

ward, then forward again : and thus having performed every motion orderly and comely, bow down your body to the Prince, and so depart.

But if you intend to Ride only for Recreation, then you shall mark what Lesson your Horse is most imperfect in, and with that lesson you shall ever when you ride both begin and end ; after it you shall fall to those lessons which are to your self most difficult, and by the practise of them bring your self to a perfectness, then consequently to all other lessons, repeating (as it were) every one over more or less, lest want of use breed forgetfulness, and forgetfulness utter ignorance ; but if your Recreation in Riding be tyed to any special rules of health, and that your practise therein proceed more from the Commandment of your Physitian than your pleasure, then I would wish you in the morning first to begin with a stirring, or rough Lesson, as the *gallop galliard*, *bounding*, or such like, which having a little stirred your blood, and made it warm, you shall then calm it again with a gentle manage, or the galloping of large Rings ; then to stir your spirits again, to bring the stone down, or procure appetite, pass into the *capriole* or *corvers* ; and then to make quiet those moved parts, set the turn called, *Terra, Terra*, the *Incavalere*, and such like. And thus one while stirring your blood, and another while moderately allaying such stirring, you shall give your body that due and proper exercise which is most fit for health and long life. Many other waies this Recreation may be used, for the good of a mans body, which because particular infirmities must give particular rules how and when to use it, I will at this time speak no further thereof, but refer the exercise to their own pleasures which shall practice the same, and to the good they shall find in the practise.

CHAP. III.

Of the breeding of all sorts of Horses fit for the Husbandmans use.

THe minds of men being swayed with many various motions, take delight sometimes to be recreated, rather with contemplative delights, then with active pleasures, and there is

Strong reason therefore, because disability of body, or affairs of the Kingdome or common-wealth, may take a man from those pre-occupations, which otherwise might stir him to more laborious exercise; and of these contemplative Recreations, I can prefer none before that Gentlemanly and beneficial delight of breeding creatures meet for the use of man, and the good of the Common-wealth, wherein he liveth; and of these breedings I cannot esteem any so excellent, as the breeding of Horses, both for the pleasure we gain thereby in our own particular service, and also for our strength, defence, and tillage of the Kingdome.

The breeding
of Horses.

He therefore that suiteth his recreation to the breeding of horses, must first have respect unto the ground whereon he liveth or injoyeth; for every ground is not meet to breed on, but some too good, some too bad: some too good, because they may be exhausted to a more beneficial commodity, Horses having a world of casualties attending on them, and many years before the true profit doth arise: and some too bad, because the extreame barrenness of the same will deny competent nourishment to the thing bred, and so to the loss of time and profit adde mortality.

Grounds to
breed on.

The grounds then meet to breed horses on, would neither be extreame fruitful, nor extreame barren, but of an indifferent mixture, yield rather a short sweet burthen, then a long, rich and fruitful, it would rather lye high than low, but howsoever firm and hard under the foot; it would be full of Mole-hills, uneven treadings, hills, and much cragginess, to bring Colts to nimbleness of foot, it would have good store of fresh waters, an open sharp ayr, and some convenient covert; and this ground is best, if it be several and inclosed, yet may be bred upon, though it be open, and in common, only some more carefulness to be looked for, a little before, and in time of Foaling. Nay, the grounds which are neither several nor common, are very good also to breed on, and those be your teathering grounds, which we call particular grounds; for though they be proper commonly to one man, yet they are not divided nor eaten otherwise than at the owners pleasure: And these teathering grounds are as good as any grounds for the first nourishing of a Foal, if they

be amongst Corn-grounds or any grain except pease only.

If you have much ground to breed on, you shall divide it in- Division of
to many pastures, the least and barrenest for your Stallion to grounds.
run with your Mares in, those which have least danger of waters
are for your Mares to foal in, the fruitfulest and of best growth,
for your Mares to give milk in; and the most spacious and une-
venest to bring up your Colts in, after they are weaned.

For the choice of a good Stallion, and which is best for our Choice of Stal-
Kingdome, opinion swayeth so far, that a man can hardly give lions, and
well received Directions: yet surely if men will be ruled by the which are best,
truth of experience, the best Stallion to beget horses for the Wars
is the *Coursier*, the *Fennet*, or the *Turk*; the best for courting and
running is the *Barbary*; the best for hunting is the *Bastard cour-*
ser begot of the *English*; the best for the Coach is the *Flemish*,
the best for travel or burthen is the *English*, and the best for ease
is the *Irish hobby*.

For the choice of Mares, you shall greatly respect their shapes Choice of
and mettals, especially that they be beautifully fore-handed, for Mares.
they give much goodnesse to their Foals: and for their kinds,
any of the *Races* before spoken of is very good; or any of them
mixt with our true English *Races*, as *Bastard-coursier*, *Mare*, *Ba-*
stard-Fennet, *Bastard-Turk*, *Barbary*, &c.

The best time to put your Stallion and Mares together is in When to put
the middle of *March*, if you have any grass, as you should have them together.
great care for, that purpose, and one foal falling in *March*, is
worth two falling in *May*, because he possesseth, as it were, two
winters in a year, and is thereby so hardened, that nothing can
(almost) after impair him, and the best time to take your horse
from the Mares again, is at the end of *April*, or middle of *May*,
in which you shall note, that from the middle of *March*, till the
midst of *May*, you may at any time put your Stallions to your
Mares, and a months continuance is ever sufficient: provided e-
ver, as near as you can, that you put them together in the in-
crease of the Moon; for Foals got in the wane are not accounted
strong or healthful.

For covering of Mares, it is to be done two waies, out of Of covering
hand, or in hand; out of hand, as when the Horse and Mares run Mares.
together abroad, as is before said; or turned loose into some
empty

empty barn for three nights one after another, which is the surest and the safest way for a Mares holding; or in hand, early in a morning, and late at an evening two or three daies together, when you bring the Horse to the Mare, and make him cover her once or twice at a time holding him fast in your hand, and when the act is done, lead him back to the stable; and in this act you shall ever observe, as soon as the Horse cometh from her back, presently to cast a pail of cold water on her hinder parts, or else to chase her swiftly, up and down, for fear, by standing still she cast out the seed, which is very ordinary.

To know if a Mare hold.

To know whether your Mare hold to the Horse or no, there be divers waies, of which the best is by offering her the Horse again at the next encrease of the Moon, which if she willingly receive, it is a sign she held not before; but if she refuse, then it is most certain she is sped, or if you powre a spoonful of cold vinegar into her ear, if she shake only her head, it is a sign she holds; but if she shake head, body and all, then truly it is a sign that she doth not hold: Lastly, if after she is covered, you see her scour, her coat grow smooth and shining, and that she doth (as it were) renew and increase in liking, it is a sign she holds; but if she hold at a stay without any amendment, then offer the Horse again for she is not served.

To conceive Male foals.

To make your Mares conceive most male Foals, you shall be sure to keep your Stallion proud, and your Mare poor, that his lust mastering hers, he may only be predominant and chief in the action: many other rules fancy deviseth, but they ere in their ends, and I would by no means have this discourse capable of any uncertainty.

To provoke lust.

If you have any advantage given you by friendship, or otherwise whereby you may have a Mare at the present very well covered, only yours is not yet ready for the horse, you shall in this case to provoke lust in her, give her to drink good store of clarified hony, and new milk mixt together, and then with a bush of nettles all to nettle her privy parts, and then immediately offer her to the Horse.

To keep Mares from barrenness.

To keep your Mares from barrenness, and to make them ever apt to conceive foals, you shall by no means feed too extreame fat, but keep them in a middle state of body by moderate labour,

bour,

bour, for the leaner they are when then they come to take Horse, the much better they will conceive.

After your Mares have been covered, and that you perceive in them the marks of conceiving, you shall let them rest three weeks or a month, that the substance may knit; then after, moderately labour or travel them, till you see them spring, and then turn them abroad, and let them run till they foal; for to house them after is dangerous and unwholsome.

Ordering of
Mares after
covering.

If your Mare be hard of foaling, or will not clense after she hath foaled, you shall take a pint of running water, wherein good store of fennel hath been boyled, and as much strong, old, sweet wine, with a fourth part of the best Sallet oyl, and having mixt them well together, being but luke-warm, pour it into her nostrils, and then hold and stop them close, that she may strain her whole body, and it will presently give her ease.

A help for
Mares after
foaling.

As soon as your Mare hath foal'd, you shall remove her into the best grass you have, which is fresh and unsoiled, to make her milk spring; and if it be early in the year, you shall have a care that there be good shelter in the same, and there let her nourish her foal most part of the summer following.

Ordering of
Mares after
foaling.

As touching the weaning of foals, though some use to wean them at *Michaelmas*, or *Martlemas* following; out of a supposition that the winter milk is not good or wholsome, yet they are much deceived; and if you can by any convenient means, (saving greater losses) let your foals run with their Dams the whole year, even till they foal again, for it will keep the foal better in health, in more lust, and least subject to tenderness.

Weaning of
Foals.

When you intend to wean your foals, you shall take them from their Dams over-night, and drive them into some empty house, where they may rest; and the Mares be free from their noises, then on the morning following give to every foal fasting a branch or two of *Saven* anointed or rold in butter, and then having fasted two hours after, give him a little meat, as grass hay, or garbidge of Corn, with some clear water, and do this three daies together; then seeing that they have forgotten their Dams, geld such Colt foals, as you intend to make geldings of; and after their swellings are past, put them unto your other Colt-foals.

Ordering after
the weaning.

foals.

foals into a pasture provided for them by themselves, and your Filly-foals into another by themselves: which Pastures may either be high Woods, Commons, or such like spacious peeces of ground, where they may run till they be ready for the Saddle.

Gelding of
Colts.

Now, albeit I proportion unto you this manner of gelding of Foals, yet I would have you know that the best and safest way to geld them is, if it may be under the Dam when they suck, at nine, or at fifteen daies of age, if the stones appear, or else so soon as you can by any means perceive them fall down into the Cod, for then there will be no danger of swelling, or other mischiefs, which commonly attend the action. And thus much touching the breeding of Horses, and the observations due to the same through all the courses and passages thereof, as hath been found by ancient practise and experience, as appears in my *Master-piece*.

CHAP. IV.

Of Horses for travel, and how to make them amble.

THe Husbandman, whose occupation in the general affairs of the Common-wealth, as some to the market, some to the City, and some to the seats of Justice, must necessarily be employed almost in continual travel; and therefore it is meet that he be provided ever of a good and easie travelling horse.

The marks of
a good travel-
ling Horse.

The marks whereby he shall chuse a good travelling horse, are these; he shall be of a good colour and shape, lean headed & round foreheaded, a full eye, open nostril, wide jawed, loose thropled, deep neckt, thin crested, broad breast, flat chinn'd, out ribb'd, clean limb'd, short joynted, strong hoofed, well mettall'd, neither fiery nor craving, strong in every member, and easie to mount and get up upon; he shall follow with haling, and stand still when he is restrained.

To make a
Horse amble.

Now forasimuch as there are a world of good horses which are not easie, and a world of easie horses which are not good, you shall by these directions following, make any horse amble whatsoever: first, then you shall understand that practise hath made divers men believe that divers waies they can make a horse amble,

amble, as by gagging them in the mouths, by toying them in deep earth, by the help of shooes, by galloping and tyring, or such like, all which are ill and imperfect; yet the truth is, there is but one certain and true way to compass it, and that is to make a strong Garth-web, flat and well quilted with cotten, four patterns for the smalls of his fore-legs, under his knees, and for the finalls of his hinder-legs somewhat below the cravin-joynts: to these patterns you shall fix strong straps of Leather, with good Iron Buckles to make shorter or longer at pleasure, and having placed them about his fore-legs, you shall take two severall round ropes of an easie twist, made with strong loops at either end, and not above eight handfuls in length, and these, the horse standing to a true proportion, you shall fasten to the four straps of leather, to wit, one of them to his near fore-leg, and his near hinder-leg, and the other to his far fore-leg, and his far hinder-leg, which is called amongst horsemen, Trammelling; with these you shall let him walk in some inclosed piece of ground, till he can so perfectly go in the same, that when at any time you offer to chase him, you may see him amble swiftly and truly; then you shall take his back and ride him with the same Trammels at least three or four times a day till you find that he is so perfect, that no way can be so rough and uneven, as to compell him to alter his stroke or go unnimby. This done, you may first take away one Trammel, then after the other, and onely wreath about under his fore-feet locks thick and heavy, great Roles of Hay, or Straw-ropes, and so ride him with the same a good space after; for it will make him amble easie, then cut them away, and ride and exercise him without any thing but the ordinary help of the bridles, and there is no doubt but he will keep his pace to your full contentment and pleasure.

Divers wayes
of Ambling.

Of Trammel-
ling.

Of whisping.

Now during this time of your teaching, if your horse strike not a large stroak, and over-reach enough, then you shall make the Trammel the straiter; but if he over-reach too much, then you shall give it more liberty: and herein you shall find, that an inch straining, or an inch enlarging, will add or abate at least half a foot, an whole foot and direct stroak. And thus much touching the teaching of any horse to amble, of what nature or quality soever he be, or how unapt or untoward soever to learn.

CHAP. V.

Of the ordering and dieting of the Hunting-Horse.

Some love hunting for the exercise of their own bodies, some for the Chase they hunt, some for the running of the Hounds, and some for the training of their horses, whereby they may find the excellency of their goodness and indurance. To him therefore which placeth his delight in the goodness of his horse, I would wish him to order and diet him, and he shall most assuredly come to the true knowledge of the best worth which is within him. And if in these Rules which I now shew, I be less curious than formerly I have been, let no man wonder thereat, but know that time (which is the mother of experience) doth in our labours shew us more new and more nearer wayes to our ends, than at first we conceived. And though when I first practised this Art, I knew not how to bring a very fat horse from *Mischaelmas* till *(bristmas)*, to shew his utmost perfection, I know now in two months (though never so foul) how to make him for any wager, daring now boldly to adventure on that, at which before I thought almost present death to offer; thus doth observation and labour find out the darkest secrets in Art.

Taking up of
the Hunting
Horse.

To begin then with the first ordering of a Hunting-horse, you shall know, that the best time to take him from grass is about *Baribolmew-side*, they begin fair, dry, and pleasant, and as soon as he is taken up, to let him stand all that night in any waste-house to empty his body, the next day stable him, and give him Wheat-straw if you please, but no longer in any wise; for though the old rule is to take up horses bellies with straw, yet it straitneth the Guts, heats the Liver, and hurteth the Wind: therefore let only moderate exercise, as riding him forth to water morning and evening, and other aytings do what you expect straw should; and for his food let it be hay that is sweet though rough, and either old, or at least well sweat in the Mow.

Cloathing the
Horse.

After his belly is emptied, you shall cloath him first with a single cloath, whilst the heat indureth, and after with more, as you shall see occasion require, and when you begin to cloath the horse, then you shall dress, curry, and rub him also. Now for as much as it is a rule with ignorant Horsemen, that if they have but

but the name of keeping a Hunting-horse, they will with all care (without any reason) lay many cloaths upon him, as if it were a special Physick, you shall know they are much deceived therein, and may sooner do hurt than good with multiplicity of cloaths; therefore to cloath a horse right, cloath according to the Weather, and the temper of his body; and thus if you see your horse be sleight, smooth, and well coloured, then cloath him temperately, as with a single cloath of Canvase or Sack-cloth at the most; and if then as the year grows colder, you find his hair rise or stare about his neck, flanks, or outward parts, then you shall adde a woollen cloath, or more if need require, till his hair fall smooth again, holding it for your rule, That a rough coat shews want of cloath, and a smooth coat cloathing enough; yet if your horse have been clean fed, taken exercise sufficient, and hath not much glut within him, if then you find that in the night he sweateth in his cloaths, then it is a sign he is over-fed; but if he be foul inwardly, or hath no sweat formerly, and now sweats coming to good feeding, then you shall augment rather than diminish any cloathing for his foulness, but then breaketh out, and being evacuated, he will come to dryness of body again, and so continue all the year after; and surely for an ordinary proportion of cloaths, I hold a Canvase cloath, and a cloath of Housewives Woollen to be at full sufficient for a Hunting-horse.

A Hunting-horse would be drest in his dayes of rest, twice a day, that is, before he go to his morning watering, and before he go to his evening watering. For the manner of his dressing after he is uncloathed, you shall first curry him from the tips of the ear to the setting on of his tail, all his whole body most entirely over with an Iron comb, his leggs under the knees and cambrels only excepted; then you shall dust him, then curry him again all over with a round brush of Bristles, then dust him the second time, then rub all the loose hairs away with your hands wet in clean water, and so rub till the horse be as dry as at the first, then rub all his body and limbs over with an hair-cloath. Lastly, rub him over with a fine white linnen Rubber; then pick his eyes, nostrils, sheath, cods, tuell, and feet very clean, and so cloath him, and stop him round with wisps, if you water within the

Of dressing the
Hunting Horse.

house; otherwise saddle him after his body is wrapt about in a Woollen cloath, and so ride him forth to the water.

Of watering
the Hunting
Horse.

The best water for a hunting-horse, is either a running River, or a clear Spring remote from the Stable a mile, or a mile and a half at most, and neer unto some plain piece of ground, where you may scope and gallop after he hath drunk; and as soon as you bring your horse to the water, let him take his full draught without trouble or interruption; then gallop and scope him up and down a little, and so bring him to the water again, and let him drink what he please, and then gallop him again: and thus do, till you find he will drink no more: then having scop'd him a little, walk him with all gentleness home, and there cloath him up, stop him round with great soft wisps, and so let him stand an hour upon his bridle, and then feed him.

Of feeding
the Hunting
Horse.

To speak first for the food for hunting horses, the most ordinary is good sweet sound Oats, either thoroughly dreyed with age, or else on the Kiln, or in the Sun, and if your horse be either low of flesh, or not of perfect stomach, if to two parts of those Oats you add a third part of clean old Beans, it shall be very good and wholesome, and if your horse be in diet for a Match, and have lost his stomach, if then you cause the Beans to be spelted upon a Miln, and so mixt with Oats, it will recover him. The next food, which is somewhat stronger and better, is Bread thus made; take two Bushel of good clean Beans, and one bushel of Wheat, and grind them together; then through a fine Range boulte out the quantity of two pecks of pure meal, and bake it in two or three loaves by it self, and the rest sift through a Meal-sieve; and knead it with water and good store of Barm, and so bake it in great loaves, and with the coarser bread feed your horse in his rest, and with the finer against the dayes of sore labours. Now for the hours of his feeding it shall be in the morning after his coming from water, an hour after high noon, after his coming from his evening water, and at nine or ten of the clock at night upon the dayes of his rest; but upon the dayes of his exercise, two hours after he is thoroughly cold inwardly and outwardly, and then after according as before mentioned. Lastly, for the proportion of food, you shall keep no certain quantity, but according

cording to the horses stomach, that is to say, you shall feed him by a little at once, so long as he eats with a good appetite; but when he begins to trifle or fumble with his meat, then to give him no more. Now for his Hay, you shall see that it be dry, short, uplandish hay; and so it be sweet, respect not how coarse or rough it is, sith it is more to scour his teeth, and cool his Stomach, then for nourishment expected from it.

Touching the horses exercise, *which is only in the following of the bounds*, you shall be sure to train him after those which are most swift and speedy; for so you shall know the truth, and not be deceived in your opinion. Touching the dayes, *it shall be twice a week at least, but most commonly thrice*. As for the quantity of his exercise, it must be according to his foulness or cleanness: for if he be very foul, you must then exercise moderately to break his grease: if half foul, half clean, then somewhat more to melt his grease: and if altogether clean, then you may take what you please of him (provided, that you do nothing to discourage his spirits, to abate his mettle, or to lame his limbs) and after every dayes exercise, be assured either to give him the same night, or the next day following, something by way of scouring; or otherwise to take away the Grease formerly melted, by means whereof you shall be ever sure to keep your horse in all good health and perfection.

The exercise
of the Horse.

The best and most excellentest way to scour or purge your horse from all grease, glut or filthiness within his body, which is a secret hitherto was never either sufficiently taught, or perfectly learned, is to take of Anniseeds three ounces, of Cumminseeds six drams, of Caribamus a dram and a half, of Fenugreek-seed one ounce two drams, of Blimstone one ounce, and a half, beat all these to a fine powder, and Carse them; then take of Sallet-oyl a pint and two ounces, of honey a pint and a half, and of White-wine four pints, then with as much fine white meal as will suffice, make all into a strong stiff paste, and knead and work it well: this paste keep in a clean cloath, for it will last long, and after your horse hath been hunted, and is at night, or in the morning exceeding thirsty, take a ball thereof as big as a mans fist, and wash and dissolve it in a gallon or two of cold water, and it will make the water look white like milk; then offer

The scouring
of the Horse.

it the horse to drink in the dark, lest the colour displease him: if he drink it, then feed him; but if he refuse to drink it, yet care not, but let him fast without drink till he take it, which assuredly he will do in twice or thrice offering; and after once he hath taken it, be then assured he will forsake any other drink for it; of this drink your horse can never take too much, nor too oft if he have exercise, or otherwise it feeds too sore. For all inward infirmities whatsoever it is a present remedy; therefore I would not wish any horsemen of vertue at any time to be without it; and being once made, it will last three or four months at least.

Ordering of a
Horse after ex-
ercise.

After your horse hath been exercised with hunting, running train-sets, or otherwise, you shall ever cool him well in the field before you bring him home; but being come to the stable you shall neither wash nor walk, but instantly house him, give him store of fresh litter and rub him therewith, and with dry cloaths, till there be not a wet hair about him, then cloath him with his ordinary cloaths, and wisp him round: then cast another spare cloath over him, which you may abate at your pleasure, and so let him stand till it be time to feed him. And thus you may keep any hunting horse either for match or otherwise, in as good state and strength as any horseman in this Nation, though he exceed you far both in Reputation and Experience,

C H A P. V I.

Of the ordering and dieting of the Running Horse.

IF any husbandman have his mind taken up onely with the delight of Running-horses, which is a noble sport, and though not of so long indurance, yet equal with any before spoken of, he shall for the bettering of his knowledg give to his memory these few Rules following, by which he shall rightly order and diet him.

Of his taking
up.

First, for his taking up from grafs (for there for order sake we must first begin) it shall be at the same time of the year, and after the same manner that you took up your hunting horse, and till you have enfeamed him, hardned his flesh, taken away his inward Grease, and brought him to a good perfectness of wind, you shall cloath him, dress him, water him, feed him, exercise him,

him, purge him, and order him after labour, in all points, and in all things as you did your hunting horse.

When he is thus clean of body and wind, you shall then lay en Of cloathing him.
 some more cloaths, than you did on your Hunting-horse, to purge his body a little the more, and to make him the more apt to sweat, and evacuate humors as they they shall grow: the ordinary quantity whereof would be a warm narrow woollen cloath about his body on either side his heart, then a fair white sheet, a woollen cloath about it, and a Canvase cloath or two above it, and before his breast a woollen cloath at least two double: he would continually stand upon clean litter, and have his stable very dark, and perfumed with Juniper, when as the strength of his dung shall annoy it.

For his dressing, it shall be in all points done as you did to Of dressing him.
 your hunting horse, only to dress him once a day is sufficient, and that ever in the afternoon: but for rubbing his limbs or body with dry cloaths or wisps, you shall do as often as you come into the Stable, provided that you turn but his cloaths up, but not take them from his body.

You shall water your running horse as you watered your hunting horse, and give him the same exercise after it, only you shall Of watering him.
 not bring him into the Stable of at least an hour and more after he is watered.

The best food for your running horse, is either good sweet Of feeding him.
 Oats well dried, sunned and beaten, or bread made of two parts wheat, and but one part beans, and boulded and sifted, and knodden, as was before shewed; only if you adde to your better sort of bread the whites of twenty or thirty Eggs, and with the barm, a little Ale also, it will be much the better; for you shall not respect how little water you use at all. The hours you feed in, and the quantity of the food shall be the same, and in the same manner as was mentioned before for the hunting horse, yet with these observations, that if your horse be very lean, sickly, and have a weakly stomach, that then you may as before shewed, give him with his Oats a few speckled beans, or else wash his Oats in strong Ale or Beer, or in the Whites of a couple of Eggs.

Touching his exercise, it consisteth in two kinds, the one Of his exercise.
 ring, the other courting; by ayiring,
 ayiring, is a moderate and gentle exercise which

which you shall use morning and evening, by riding or leading your horse a foot-pace (but riding is better and less in danger of cold) in the morning after his water up to the Hills, and in the evening after his water by the River-side, by the space of an hour or two together; and before you lead him forth to air, you shall be sure to give him a rere-egg broken into his mouth as soon as his Bridle is put on, for it will increase wind: and this ayring you shall by no means forbear, but upon his dayes of purging or sweating, or when it much raineth, for then to ayr is unwholsom. Again, if your horse be very fat, you shall air before Sun-rise, and after Sun-set: but if he be lean, then you shall let him have all the strength and comfort of the Sun you can devise; and during this ayring, you shall be sure that your horse be cloathed very warm, especially before the breast, and on each side the heart, for cold to a running horse is mortal.

Of exercise by
coursing.

You shall course your horse according to his strength and ability of body, that is to say, twice a week thrice, or as oft as you see cause, and you shall course him sometimes in his cloaths to make him sweat and consume his grease, and that must be done moderately and gently: and sometime without his cloath, to increase wind, and that shall be done sharply and swiftly: you shall by keeping your horse fasting the night before, be sure that his body be empty before he do course, to wash his tongue and nostrils with vinegar, or to piss in his mouth ere you take his back, is very wholsome: you shall lead him in your hand well and warm clothed to the course, and there uncloath him, and rub his limbs well, then having coust him, after a little breath taking, cloath him again, and so ride him home, there rub him throughly, and let him stand till he be fully cold; which perceived, let his first meat you give him be a handfull or two of the ears of Pollard Wheat; then after, his ordinary food as aforesaid.

Of Sweats.

There is also another exercise for your running horse, which is, sweats in his cloaths, either abroad or in the house. For sweats in his cloaths abroad, they are those which are taken upon the course, and are formerly spoke of, that they must be given by a moderate galloping, no man running, and as soon as your horse hath past over his course, and is in a high sweat, you shall instantly

instantly have him home, and there lay more cloths upon him, and keep him stirring till he have sweat so in the Stable an hour or more, then abate his cloaths by little and little, till he be perfectly cooled and dried; which you must further by rubbing him continually with dry cloths, and by laying dry cloaths on, and taking the wet away: but for Sweats in his cloaths, without any exercise abroad, you shall give them either when the weather is so much unseasonable, that you cannot go forth, or when your horse is so much in danger of lameness, that you dare not strain him; and you shall do it thus. First take a Blanket folded and warmed very hot, and wrap it about his body, then over it lay two or three more, and wisp them round; then over them as many cover-lids, and pin them fast and close; then make the horse stir up and down the Stable till he begin to sweat, then lay on more cloaths, and as the sweat trickleth down his face, so rub it away with dry cloaths till he have sweat sufficiently; then (as before is shewed) abate the cloaths by little and little, and rub him in every part, till he be as dry as at first.

After every course or sweat, you shall scour or purge your horse Of scouring him. in the same manner, and with the same medicine that you did your Hunting-horse; for it is the best that can by art be invented, being both a Purge and a Restorative, cleansing and comforting all the parts of a horse's body: but if you think it purgeth not enough, then you shall take twenty Raisins of the Sun, the stones pickt out, and ten Figs slit in the midst, boyl them in a pottle of fair running water, till it come to be thick, then mix it with powder of Lycoras, Anniseeds, and Sugar-candy, till it come to a stiff paste, then make pretty round balls thereof, and roul them up in butter, and give your horse three or four of them the next morning after his sweat or course, and ride him an hour after, and then set him up warm.

After your horse hath been courst or sweat, and is as before said cold and dry, you shall then unbridle him, give him some few Ordering after exercise. Wheat-ears, and then at an hour or two after give him a very sweet mash, then some bread after, then at his due hour dress him, and give him when you find him thirsty some cold water, with a ball of your Leaven dissolved in it, and so let him stand till you feed him for all night.

General Rules
for a running
Horse.

Course not your horse sore for at least four or five dayes before you run your match, lest the soreness of his limbs abate him of his speed.

Except your horse be a very foul feeder muzzle him not above two or three nights before his match, and the night before his bloody courses.

Give your horse as well his gentle courses, as his sharp courses upon the Race he must run, that he may as well find comfort as displeasure thereon.

In training your horse, observe not the number of the miles, but the labour fit for your horse.

Be sure upon the Match-day that your horse be empty, and that he take his rest untroubled, till you prepare to lead him forth.

Shooe your horse ever a day before you run him, that the pain of the hammers knocks may be out of his feet.

Saddle your horse on the Race-day in the Stable before you lead him forth, and fix both the Pannel and the Girths to his back and sides with Shoo-makers wax, to prevent all dangers.

Lead your horse to his course with all gentleness, and give him leave to smell to other horses dung, that thereby he may be enticed to stale and empty his body as he goes.

When you come to the place where you must start, first rub his limbs well, then uncloath him, then take his back, and the word given, start him with all gentleness and quietness that may be, lest doing any thing rashly you happen to choak him in his own wind.

And thus much for the ordering and dieting of the Running horse, and the particularities belonging to the same.

CHAP. VII.

The ordering of the Travelling Horse.

General Rules
for a travelling
Horse.

NOW for our Husbandmans Travelling Horse, which is to carry him in his Journeys, and about his business in the Country, he shall first feed him with the best sweet hay, dry oats or dry beans and oats mixt together: in his travel he shall feed him according to his stomach, more or less, and in his rest at a certain

certain proportion ; as half a Peck at each watering, is utterly sufficient.

If you travel, feed your horse early, that he may take his rest soon.

In travel, by no means wash nor walk your horse, but be sure to rub him clean.

Water him a mile before you come to your Inne, or more, as shall lye in your journey ; or if you fail thereof, forbear it till next morning ; for water hath often done hurt, want of water never did any.

Let your horse neither eat nor drink when he is extream hot, for both are unwholsome.

When the dayes are extream hot, labour your horse morning and evening, and forbear high-noon.

Take not your Saddle off suddenly, but at leisure, and laying on the cloath, lay on the Saddle again till he be cold.

Litter your horse deep , and in the days of his rest let it also lye under him.

Dress your horse twice a day when he rests, and once when he travels.

If the horse be stoned let him go to the soyl, and be purged with grass in May ; a moneths time is long enough , and that grass which grows in Orchards under Trees is best.

Let him blood Spring and Fall, for they are the best times to prevent sicknesses.

In your journeying light at every steep hill, for it is a great refreshing and comfort to your horse.

Before you sleep, every night in your journey see all your horses feet stopt with Oxe-dung, for it taketh away the heat of travel and surbating.

Many other necessary Rules there are, but so depending upon these already shewed, that who so keepeth them shall not be ignorant of any of the rest ; for they differ more in name than nature.

CHAP. VIII.

How to cure all general inward sicknesses in horses, which trouble the whole body, of Feavers of all sorts, Plagues, Infections, and such like.

Sicknesses in general are of two kinds, one offending the whole body, the other a peculiar member: the first hidden and not visible, the other apparent and known by his outward demonstration. Of the first then, which offend the whole body, are Feavers of all sorts, as the Quotidian, the Tertian, the Quartan, the Continual, the Hittique, the Feavers in Autumn, in Summer, or in Winter, the Feaver by Surfeit, Feaver Pestilent, Feaver Accidental, or the general Plague, they are all known by these signs, much trembling, panting, and sweating, a fullen countenance that was wont to be cheerful, hot breath, faintness in labour, decay of stomach, and costiveness in the body; any, or all of which when you perceive, first let the horse blood, and after give him this drink. Take of *Scandine* roots leaves and all a good handful, as much *Wormwood*, and as much *Rew*, wash them well and then bruise them in a Mortar, which done, boyl them in a quart of Ale well, then strain them, and adde to the liquor half a pound of sweet Butter, then being but luke-warm give it the horse to drink, or half an ounce of *Diapente*, in a pint of Muscadine.

The Cure.

CHAP. IX.

Of the Head-ach, Frenzy, or Staggers.

THE signs to know these Diseases, which indeed are all of one nature, and work all one effect of mortality, are hanging down of the head, watry eyes, rage, and reeling. And the Cure is to let the horse blood in the neck three mornings together, and every morning to take a great quantity, then after each morning blood-letting, to give the horse this drink. Take a quart of Ale, and boyl it with a big white bread crust, then take it from the fire, and dissolve three or four spoonfuls of honey in it, then luke-warm give it the horse to drink, and cover his temples over with a plaister of Pitch, and keep his head exceeding warm, let his meat be little, and his Stable dark: but to give him the former

The Cure.

quan-

quantity of *Diapente*, either in Muskadine or Honey-water is the best Cure.

CHAP. X.

Of the Sleeping Evil.

THe Sleeping Evil or Lethargy in horses proceeds from cold flegmy moist humors, which bind up the vital parts, and makes them dull and heavy. The signs are continual sleeping, or desire thereunto. The Cure is, to keep him much waking, and twice The Cure. in one week to give him as much sweet Soap (in nature of a Pill) as a Ducks egg, and then after give him to drink a little new milk and honey, which is the only cure at the first for this disease. But to be certain, I pray look in my *Master-piece*, and there you shall find the infirmity more largely discoursed of, this being but a general cure of all Cattel, and not particularly handled of horses, as that is.

CHAP. XI.

Of the Falling Evil, Planet-strook, Night-Mare, or Palsie.

THough these diseases have several faces, and look as though there were much difference between them, yet they are in nature all one, and proceed all from one offence, which is only cold flegmatick humors, ingendred about the Brain, and benumbing the Senses, weakning the members, sometimes causing a horse to fall down, and then it is called the Falling Evil; sometimes weakning but one member only, then it is called Planet-strook, sometimes opprelling a horses stomach, and making him sweat in his sleep, and then it is called the Night-Mare; and sometimes spoyling an especial member by some strange contraction, and then it is called a Palsie. The Cure. The Cure for any of these infirmities, is to give the Horse this purging Pill: Take of *Tar* three Spoonfuls, of sweet butter the like quantity, beat them well together with the powder of *Lycoras*, *Anniseds*, and *Sugar-Candy*, till it be like paste, then make it into three round balls, and put into each ball two or three cloves of Garlick, and so give them unto the horse; observing to warm him both before and after, and keep him fasting two or three hours likewise, both before and after.

CHAP.

CHAP. XII.

Of the general Cramp, or Convulsion of Sinews.

The Cure.

CRamps are taken to be the contraction or drawing together of the sinews of any one member; but Convulsions are when the whole body, from the setting on of the head to the extreamest parts are generally contracted and stiffened. The Cure of either is, first to chase and rub the member contracted with Vinegar and common Oyl, and then to wrap it all over with wet Hay, or rotten Litter, or else with wet woollen cloaths, either of which is a present remedy.

CHAP. XIII.

Of any Cough or Cold whatsoever, wet or dry, for any Consumption or putrifaction of the Lungs whatsoever.

The Cure.

ACold is got by unnatural heats, and too sudden coolings, and these Colds ingender Coughs, and those Coughs putrifaction or rottenness of the Lungs. The Cure therefore for them all in general, is to take a handful or two of the white and greenish Moss which grows upon a Oak-pole, or any old Oak-wood, and boyl it in a quart of Milk till it be thick, and being cold turned to a Jelly, then strain it, and give it the horse luke-warm every morning till his Cough end; or else take three quarters of an ounce of the Conserve of Elicampane, and dissolve it in a pint of Sack, and luke-warm give it the horse fasting; then ride him after it, and set him up warm, feed as at ordinary times; thus do three mornings together.

CHAP. XIV.

Of the running Glaunders, or the mourning of the Chinc.

TAKE of Auripigmentum two drams, of Tusilaginis made into powder as much, then mix them together with Turpentine till they be like paste, and making thereof little Cakes, dry them before the fire; then take a chafing-dish and coals, and laying one or two of the cakes thereon, cover them with a Tunnel, and then the smoak rising, put the tunnel into the horses nostrils, and

and let the smoak go up into his head : which done, ride the horse till he sweat. Do thus once every morning before he be watered, till the running at his nostrils cease, and the kernels under his chaps wear away.

CHAP. XV.

Of Hide-bound, or consumption of the flesh.

HIDE-bound, or consumption of the flesh, proceeds from unreasonable travel, disorderly diet, and many surfets. It is known by a general dislike and leanness over the whole body, and by the sticking of the skin close to the body, in such sort that it will not rise from the body. The Cure is, first to let the horse bleed, and then give him to drink three or four mornings together a quart of new milk, with two spoonfuls of honey, and one ounce of London Treacle : then let his food be either sodden Barley, warm Grains and Salt, or Beans spelted in a Mill, his drink Mashes.

CHAP. XVI.

Of the Breast-pain, or any other sickness proceeding from the heart, as the Anticor, and such like.

THese Diseases proceed from too rank feeding, and much fatness ; the signs are a faultring in his fore-legs, a disableness to bow down his neck, and a trembling over all his body. The Cure is, to let him bleed, and give him three mornings together two spoonfuls of *Diapente* in a quart of Ale or Beer, for it alone putteth away all infection from the heart.

CHAP. XVII.

Of tyred Horses.

IF your Horse be tyred either in Journying or any Hunting-match, your best help for him is to give him warm Urine to drink, and letting him blood in the mouth to suffer him to lick up and swallow the same. Then if you can come where any Nettles are, to rub his mouth, and sheath well therewith ; then gently to ride him untill you come to your resting place, where set him up very warm, and before you go to bed give him six spoonfuls of *Aquavite* to drink, and as much Provender as he will

will eat. The next morning rub his legs with Sheeps-foot oyl, and it will bring fresh nimbleness unto his sinews.

CHAP. XVIII.

Of diseases in the Stomach, as Surfeits, loathing of Meat or Drink, or such like.

IF your Horse with the glut of Provender, or eating raw food, have given such offence to his stomach that he casteth up all he eateth or drinketh, you shall first give him a comfortable drench, as *Lisapente*, or *Treaphamicon* in Ale or Beer; and then keeping him fasting, let him have no food but what he eateth out of your hand, which would be bread well bak'd and old, and after every two or three bits a lock of sweet Hay: and his Drink would be onely new milk till his stomach have gotten strength, and in a bag you shall commonly hang at his nose fowr brown Bread steep'd in Vinegar, at which he must ever smell, and his stomach will quickly come again to his first strength.

CHAP. XIX.

Of Foundring in the Body.

Foundring in the body is of Surfeits the mortallest and soonest gotten: it proceedeth from intemperate riding a horse when he is fat, and then suddenly suffering him to take cold; then washing a fat horse, there is nothing sooner bringeth this Infirmitie. The signs are sadness of countenance, staring hair, stiffness of limbs, and loss of belly. And the Cure is only to give him wholsom strong meat, as bread of clean beans, and warm drink, and for two or three mornings together a quart of Ale brewed with Pepper and Cinnamon, and an ounce of *Linden Treacle*.

CHAP. XX.

Of the Hungry Evil.

THe hungry Evil, is an unnatural and over-hasty greediness in a horse to devour his meat faster than he can chew it, and is only known by his greedy snatching at his meat, as if he would devour it whole. The Cure is, to give him to drink Milk and Wheat-meal mixt together by a quart at a time, and to feed him with Provender by a little and little till he forsake it.

CHAP.

The Cure.

The Cure.

CHAP. XXI.

Of the diseases of the Liver, as Inflammations, Obstructions, and Consumptions.

THE Liver, which is the vessel of blood, is subject to many diseases, according to the distemperature of the blood, and the signs to know it, is a stinking breath, and a mutual looking towards his body. And the cure is to take *Aristolochia longa*, and The Cure. boyl it in running water, till the half part be consumed, and let the horse drink continually thereof, and it will cure all evils about the Liver, or any inward conduits of blood.

CHAP. XXII.

Of the diseases of the Gall, and especially of the Yellows.

FROM the overflowing of the Gall, or rather want of the Gall, which is the vessel of Choler, spring many mortal diseases, especially the yellows, which is an extream faint mortal sickness, if it be not prevented betime: the signs are yellowness of the eyes and skin, and chiefly underneath his upper lip next unto his fore-teeth, a sudden and faint falling down by the high-way, or in the Stable, and universal sweat over all the body. The cure is, first to let the horse blood in the neck, in the mouth, and under the eyes, then take two pennyworth of *Saffron*, which being dried, and made into fine powder, mixt with sweet butter, and in manner of a Pill give it in balls to the horse three mornings together: let his drink be warm, and his hay sprinkled with water. A quart of a strong decoction of *Selladine* helps it also. 

CHAP. XXIII.

Of the sickness of the Spleen.

THE Spleen, which is the vessel of Melancholly, when it is over-charged therewith, grows painful, hard and great, in such sort, that sometimes it is visible. The signs to know it, is much groaning, hasty feeding, and a continual looking to his left side only. The cure is *Egrimony*, and boyl a good quantity of it The Cure. in the water which the horse shall drink, and chopping the

leaves small; mix them very well with sweet *May-Butter*, and give the horse two or three good round balls thereof, in the manner of Pills.

CHAP. XXIV.

Of the Dropsie, or evil habit of the body.

The Cure.

THe Dropsie is that evil habit of the body, which ingendred by surfeits and unreasonable labour, altereth the colours and complexions of horses, and changeth the hairs in such an unnatural sort, that a man shall not know the beast, with which he hath been most familiar. The Cure is, to take a handful or two of *Wormwood*, and boyling it in Ale or Beer, a quart or better, give it the horse to drink luke-warm, morning and evening, and let him only drink his water at noon-time of the day.

CHAP. XXV.

Of the Chollick, Belly-ach, and Belly-bound.

The Cure.

THe Chollick or Belly-ake is a fretting, gnawing, or swelling of the Belly, or great bag, proceeding from windy humors, or from eating of green corn, or pulse, hot grains without salt or labour, or bread drow-bak'd. And Belly-bound, is when a horse cannot dung. The Cure of the Chollick or Belly-ake is, to take good store of the herb *Dill*, and boyl it in the water you give your horse to drink: but if he cannot dung, then you shall boyl in his water good store of the herb called *Fenugreek*, and it will make him loose without danger of hurting.

CHAP. XXVI.

Of the Laxe, or Bloody Flux.

The Cure.

THe Laxe, or Bloody flux, is an unnatural looseness in a horses body, which not being stayed, will for want of other excrement, make a horse void blood only. The Cure is, take a handful of the herb *Shepherds-purse*, and boyl it in a quart of strong Ale, and when it is luke-warm, take the seeds of the herb *Woodrose* stamp'd, and put it therein, and give it the horse to drink.

CHAP.

CHAP. XXVII.

Of the falling of the Fundament.

THis cometh through milke and weaknes, and the Cure is, take *Town-Cresser*, and having dried them to powder, with your hand put up the Fundament, and then strew the powder thereon; after it, lay a little honey thereon, and then strew more of the powder, mixt with the powder of *Cammin*, and it helpeth. The Cure.

CHAP. XXVIII.

Of Bots and Worms of all sorts.

THe Bots and gnawings of Worms is a grievous pain, and the signs to know them, is the horses oft beating his belly, and tumbling and wallowing on the ground, with much desire to lye on his back. The Cure is, take the leaves chopt of the herb *Saven*, and mix it with honey and butter, and make two or three balls thereof, make the horse swallow them down, and it will help him. The Cure.

CHAP. XXIX.

Of the pain in the Kidneys, pain-piss, or the Stone.

ALL these diseases spring from one ground, which is only gravel and hard matter gathered together in the Kidneys, and so stopping the conduits of Urine. The signs are only that the horse will often strain to piss but cannot. The cure is to take a handful of *Maiden-hair*, and steep it all night in a quart of strong Ale, and give it the horse to drink every morning till he be well: this will break any stone whatsoever in a horse. The Cure.

CHAP. XXX.

Of the Stranglion.

THis is a soreness in the horses yard, and a hot, burning smarting when he pisseth: the signs are, he will piss oft, yet but a drop or two at once. The cure is, to boyl in the water which he drinketh, good store of the herb *Miyth*, or *Hoggs-Fennel*, and it will cure him. The Cure.

CHAP. XXXI.

Of pissing Blood.

The Cure.

THis cometh with over-travelling a Horse, or travelling a Horse fore in the winter when he goeth to grasse. The cure is, take *Aristolochia longa* a handful, and boyl it in a quart of Ale, and give it the horse to drink luke-warm, and give him also rest.

CHAP. XXXII.

Of the Colt-evill, murthering of the yard, falling of the yard,
shedding the seed.

The Cure.

ALL these evils proceed from much lust in a horse, and the cure is, the powder of the Herb *Apit*, and the leaves of *Betony*, stamp them with White-wine to a moist Salve, and anoint the fore therewith, and it will heal all imperfection in the yard: but if the horse shed his seed, then beat Venice Turpentine and Sugar together, and give him every morning a good round ball thereof, untill the flux stay.

CHAP. XXXIII.

Of the particular diseases in Mares, barrenness, consumption, rage of love, casting Foals, hardness to foal, and how to
make a Mare cast her Foal.

IF you'll have your Mare barren, let good store of the herb *Agrostus* be boyled in the water she drinketh. If you would have her fruitful, then boyl good store of *Morhemort* in the water which she drinketh. If she loose her belly, which sheweth a consumption of the womb, you shall then give her a quart of Brine to drink, *Mugwort* being boyled therein. If your Mare through pride of keeping grow into extream lust, so that she will neglect her food through the violence of her fleshly appetite, as it is often seen amongst them, you shall house her for two or three dayes, and give her every morning a ball of butter and *Agrostus* chopt together. If you would have a Mare to cast a Foal, take a handful of *Dittany*, and boyl it in a quart of Ale, and it will deliver her presently. If she cannot Foal, take the herb *Horsemint*, and either dry it or stamp it, and take the powder.

der or the juice, and mixe it with strong Ale, and give it the Mare, and it will help her. If your mare from former bruising or strokes be apt to cast her Foals, as many are, you shall keep her at grass very warm, and once in a week, give her a good warm mash of drink, this secretly knitteth beyond expectation. 

CHAP. XXXIV.

*Of drinking Venom, as Horse-leaches, Hens-dung, or
Jueb like.*

IF your Horse have drunk Horse-leaches, Hens-dung, feathers, or such like venomous thing, which you shall know by his panting, swelling, or scouring, you shall take the herb *Som-Thistle*, and drying it, beat it into powder, and put three spoonfulls thereof into a quart of Ale, and give it the horse to drink.

CHAP. XXXV.

Of Suppositories, Clysters, and Purgations.

IF your horse by sickness, strict diet, or too vehement travel grow dry and collicive in his body, as it is ordinary, the easiest means in extremity to help him, is to give him a Suppository: the best of which is, to take a candle of four in the pound, and cut off five inches at the bigger end, and thrusting it up a good way with your hand into his fundament, presently clap down his tail, and hold it hard to his Tuel a quarter of an hour, or half an hour, and then give him leave to dung: but if this be not strong enough, then you shall give him a Clyster, and that is, take four handfulls of the herb *Anise*, and boyl it in a pottle of running water till half be consumed, then take the Decoction, and mixe it with a pint of Saller-oyle, and a pretty quantity of Salt, and with a Clyster-pipe give it at his Tuel. But if this be too weak, then give him a purgation thus. Take twenty Raisins of the Sun without stones, and ten Figs slit, boyl them in a pottle of running water till it come to a jelly; then mix it with the powder of Lycoris, Anniseeds, and Sugar-candy, till it be like paste: then make it into round balls, and roul it in sweet butter, and so give it to the horse, to the quantity of three Hen-eggs.

The Cure.

CHAP. XXXVI.

Of Neefing and Frictions.

THere be other two excellent helps for sick horses; as Frictions and Neefings, the first to comfort the outward parts of the body, when the vital powers are astonished: the other to purge the head when it is stop't with phlegm, cold, or other thick humors. And of Frictions, the best is Vinegar and Patch-grease melted together, and very hot chased into the horses body against the hair. And to make a horse neefe, there is nothing better than to take a Bunch of Pellitory of Spain, and binding it unto a stick, thrust it up a horses nostrils, and it will make him neefe without hurt or violence.

CHAP. XXXVII.

Of diseases in the eyes, as watry eyes, blood-shotten eyes, dim eyes, Moon-eyes, stroke in the eye, wart in the eye, inflammation in the eye, Pearl, Pin, Web, or Haw.

The Cure.

Unto the eye belongeth many diseases, all which have their true signs in their names, and as touching that which is watry, blood-shotten, dim, moon, stricken or inflamed, they have all one cure. The cure is, take Wormwood, and beat it in a Mortar with the gall of a Bull, strain it, and anoint the horses eyes therewith, and it is an approved remedy. But for the Wart, Pearl, or Pin or Web, which are evils grown in, and upon the eye to take them off, take the juice of the herb Betin; and wash his eyes therewith, and it will wear the spots away. For the Haw every Smith can cut it out.

CHAP. XXXVIII.

Of the Imposthume in the ear, Pole-evil, Fistula, swelling after blood-letting, any gall'd back, Canker in the Withers, Sinfast, Wens, Navel-gall, or any hollow Ulcer.

The Cure.

THese Diseases are so apparent and common, that they need no further description but their names, and the most certain cure is to take clay of a Mud or Lome-wall, without Lime, the straws and all, and boyling it in strong vinegar, apply it plaister-wise

wife to the fore, and it will of its own nature search to the bottom and heal it; provided, that if you see any dead or proud flesh arise, that then you either eat or cut it away.

CHAP. XXXIX.

Of the Vives.

FOR the *Vives*, which is an inflammation of the kernels between the chap and the neck of the horse; take Pepper one Pennyworth, of *Swines-grease* one Spoonful, the juice of a handful of Rew, Vinegar two Spoonfuls, mix them together, and then put it equally into both the horses ears, and then tie them up with two flat laces, then shake the ears, that the medicine may go down, which done, let the horse bleed in the neck, and in the temple-veins, and it is a certain cure.

CHAP. XL.

Of the Strangle, or any Boyl, Botch, or other Imposthume whatsoever.

ALL these diseases are of one nature, being only hard Bylks or imposthumes gathered together by evil humours, either between the chaps, or elsewhere on the body. The cure is, take *The Cure*, *Southernwood*, and dry it to powder, and with Barly-meal and the yelk of an Egg make it into a Salve, and lay it to the Imposthume, and it will ripen it, break it, and heal it.

CHAP. XLI.

Of the Canker in the Nose, or any other part of the body.

TO heal any Canker in what part soever it be, take the juice of *Plantane*, as much *Vinegar*, and the same weight of the powder of *Allom*, and with it anoint the sore twice or thrice a day, and it will kill it and cure it.

CHAP. XLII.

Of stopping of Blood, whether it be at the Nose, or proceed from any wound.

IF your horse bleed violently at the nose, and it will not be staid, then you shall take *Betony*, and stamp it in a Mortar with Bay-Salt, or other white Salt, and stop it into the horses nose, or apply

ply it to the wound, and it will stanch it, but if you be suddenly taken ; as riding by the high-way, or otherwise, and cannot get this herb, you shall take any woollen cloath, or any Felt-hat, and with a Knife scrape a fine Lint from it, and apply it to the bleeding place, and it will stanch it presently.

CHAP. XLIII.

Of the diseases in the mouth, as bloody Rists, Ligs, Lampars, Camery, Inflammation, Tongue-hurt, or the Barbs.

IF you find any infirmity in your horses mouth, as the bloody Rists, which are chaps or rifts in the palate of the horses mouth ; the ligs, which are little pustules or bladders within the horses lips : the Lampars, which is an excretion of flesh above the teeth : the Camery, which is little warts in the roof of the mouth : Inflammations, which are Blisters : Barbs, which are two little paps under the tongue, or any hurt on the tongue by bit or otherwise, you shall take the leaves of Wormwood, and the leaves of *Shirmit*, and beat them in a Mortar with a little honey, and with it anoint the sores, and it will heal them. As for the Lampars, they must be burnt away, which the ignorantest Smith can easily do.

The Cure.

CHAP. XLIV.

Of pain in the Teeth, or loose Teeth.

FOr any pain in the Teeth, take Betony and sceth it in Ale or Vinegar till a half part be consumed, and wash all the gums therewith ; but if they be loose, then only rub them with the leaves of *Elicampne*, or *Horse-chelm* after they have been lee blood, and it will fasten them.

CHAP. XLV.

Of the Crick in the Neck.

FOr the Crick in the Neck, you shall first chafe it with the Friction before specified, and then anoint and bath it with Sope and Vinegar boyled together.

CHAP.

CHAP. XLVI.

*Of the falling in the Crest, manginess of the Main, or
shedding of the hair.*

ALl these diseases proceed from poverty, milke, or over-riding; and the best cure of the falling of the Crest, is blood-letting, and proud keeping, with store of meat; for strength and fatnes ever wil raise up the Crest; but if the main be mangy you shall anoint it with butter, and Brimstone, and if the hair fall away, then take Southernwood and burn it to ashes, then take those ashes, and mixing them with common oyl, anoint the place therewith, and it will bring hair presently, smooth, thick, and fair.

CHAP. XLVII.

Of pain in the Withers.

AHorses Withers are subject to many griefs and swellings which proceed from cold humors, sometimes from evil saddles, therefore if at any time you see any swelling about them, you shall take the herb Hearts-tongue and boyl it with the oyl of Roses, and very hot apply it to the sore, and it will assuage it, or else break it and heal it.

CHAP. XLVIII.

Of swaying the Back, or weakness in the Back.

THese two infirmities are dangerous, and may be eased, but never absolutely cured: therefore where you find them, take Colewort and boyl them in oyl, and mixing them with a little Bean meal charge the Back, and it will strengthen it.

CHAP. XLIX.

*Of Itch in the sayl, or of the general Scab and Manginess,
or of the Farcy.*

FOr any of these diseases, take fresh grease, & yellow Arsnick, mixe them together, and where the Manginess or Itch is, there rub it hard in, the sore being made raw: But if it be for Farcy, then with a Knife slit all the Knots, both hard and soft, and then rub in the Medicine: which done, tye up the Horse, so as he

may not come to bite himself, and then after he hath stood two or three hours, take old piss and salt boyl'd together, provided alwayes that you first let him blood, and take good store from him, and also give him every morning a strong scouring or a strong purge, both which are shewed before.

CHAP. L.

*Of any halting which cometh by strain, or stroak either before or behind from the shoulders or hips.
down to the hoof.*

THere be many infirmities which make a horse halt, as pinching the shoulder, wrench in the shoulder, wrench in the nether joynt, splatting the shoulder, shoulder pight, strains in the joynts, and such like, all which since they happen by one accident, as namely, by the violence of some slip or strain, they may be cured by one Medicine, and it is thus: After you have found where the grief is, as you may do by griping and pinching every several member, then where he most complaineth, there is his most grief. You shall take (if the strain be new) Vinegar, Bole-armenick, the whites of Eggs and Bean-flower, and having beaten them to a perfect salve, lay them very hot to the sore place, and it will cure it; but if the strain be old, then take Vinegar and Butter, and melting them together with Wheat bran, make it into a pultis, and lay it to the sore as hot as may be, and it will without doubt take away the grief.

CHAP. LI.

Of Foundring in the Feet.

OF foundring there be two sorts, a dry and a wet: the dry foundring is incurable; the wet is thus to be helpt: First, pare all the soles of his feet so thin, that you may see the quick, then let him blood at every toe, and let them bleed well, then stop the vein with Tallow and Rosen, and having tacked hollow shoes on his feet, stop them with Bran, Tarre and Tallow, as boyling hot as may be, and renew it once in two days, for a week together, then exercise him much, and his feet will come to their true use and nimbleness.

CHAP.

CHAP. LII.

*Of the Splent, Carb, Bone-spaven, or any knobby or bony
excreffion or Ring-bone.*

A Splent is a bony excreffion under the Knee or the fore-legg, the Curb is the like behind the hinder hough, the Spaven is the like on the inside of the hinder hough, and the Ring-bone is the like on the cronet of the hoof. And the cure is, first upon the top of the excreffion, make a slit with your Knife the length of a Barly-corn, or a little more, and then with a fine cornet raise the skin from the bone, and having made it hollow, the compasse of the excreffion, and no more; take a little lint, and dip it into the Oyl of *Originum*, and thrust it into the hole and cover the knob, and so let it abide till you see it rot, and that nature casteth out both the medicine & the core. As for the Ring-bone you shall need to scarrine and anoint it with the oyl only.

The Cure.

CHAP. LIII.

*Of the Malander, Selander, Pain-scratches, Mellet, Mules,
Crown-scabs, and such like.*

FOR any of these Sorances, you shall take Verdigrease and soft grease, and grinding them together to an Oyntment, put it in a Box by it self; then take Wax, hogs-grease, and Turpentine, of each a like, and being melted together, put a salve into another Box: then when you come to dress the sore; after you have taken off the scab and made it raw, you shall anoint it with your green salve of *Verdigrease* and fresh grease only for two or three dayes; it is a sharp salve, and will knit the cankerous humor: then when you see the sore look fair, you shall take two parts of the yellow salve, and one part of the green salve, and mixing them together, anoint the sore therewith till it be whole, making it stronger or weaker as you shall find occasion.

CHAP. LIV.

*Of an upper Attaint, or nether Attaint, or any hurt by
over-reaching.*

THese attaints or strokes or cuts by over-reaching either on the back finew of the fore-legg, on the heels or nether joynts

and may be safely healed by the same former medicine and means which healeth the Malander or Selander, in the former Chapter: only for your over-reaches, you shall before you apply your salve lay the sore plain and open, without hollownes, and wash it with beer and salt, or vinegar and salt.

CHAP. LV.

Of the infirmities of hoofs, as false quarters, loose hoofs, casting hoofs, hoof bound, hoof running, hoof brittle, hoof hurt, hoof soft, hoof hard, or generally to preserve hoofs.

THe hoof is subject to many miseries: as first to false quarters, which cometh by pricking, and must be helpt by good shoeing, where the shoe must bear on every part of the foot, but upon the false quarters only. If the hoof be loose, anoint it with pitch of *Burgundy*, and it will knit it: if it be clean cast off, then pitch of *Burgundy* and tallow molten together, will bring a new; if it be bound or strained, it must be very well opened at the heels, the soal kept moist, and the coronet anointed with the fat of Bacon and Tar. If the frush of the feet run with stinking matter, it must be stopt with Soot, Turpentine, and Bole-armenick mixt together: if it be brittle or broken, then anoint it with Pitch and Linseed Oyl, molten to a soft salve; if it be soft then stop it with Sope, and the ashes of a burnt Felt mixt together; if the hoofs be hard, lay hot burning Cinders upon them, and then stop them with Tow and Tallow: and generally for the preserving of all good hoofs, anoint them daily with the sword or rind of fat Bacon.

CHAP. LVI.

Of the blood-spaven, or hough-bony, or any other unnatural swelling, from what cause soever it proceedeth.

THese two sorances, or pustules, or soft round swellings, the first on the inside of the hinder hough, and the other on the very huckle on the hough behind, they are soft and very sore; and the Cure is, first to take up the vein above, and let it bleed only from below, then having knit it fast with two shoe-makers ends

on both sides the slit, cut the vein in two pieces: then take Linseed and bruise it in a Morter, then mixe it with Cow-dung and heat it in a frying-pan, and so apply it to the swelling only, and if it break and run, then heal it with a plaister of pitch, and the horse shall never be troubled with Spaven more: but if the swelling come by strain or bruise, then take patch-grease, and melting it, anoint the sore therewith, holding a hot Iron near it to sink in the grease, then fold a linnen cloath about it, and it will asswage all swellings whatsoever.

CHAP. LVII.

Of Wind-galls.

These are little blebs, or soft swellings on each side the Fetlock, procured by much travell on hard and stony wayes. The Cure is to prick them and to let out the Jelly, and then dry up the sore with a plaister of pitch. The Cure.

CHAP. LVIII.

Of Enterfairing or Shack-gall, or any gallings.

Enterfairing is hewing one legge on another, and striking off the skinne, it proceedeth from weaknesse or straitnesse of the horses paces; and Shackle-gall is any gall underneath the Fetlock. The cure is, to anoint them with Turpentine and Verdigrease mixt together, or Turpentine alone, if it rankle not too much. The Cure.

CHAP. LIX.

Hurts on the Cronet, as the Quitter-bone, or Matlong.

The Quitter-bone is a hollow ulcer on the top of the cronet; and so is the Matlong, and the Cure is; First, to raint it with Verdigrease untill you have eaten out the core, and made the wound very clean; then you shall heal it up with the same salves that you heal the Scratches. The Cure.

CHAP.

CHAP. LX.

*Of Wounds in the foot, as gravelling, pricking, figgs,
retait or cloying.*

IF your horse have any wound in his foot, by what mischance soever, you shall first search it, and see that it be clear of any nayl, point, or other splint to annoy it, then wash it very well with white Wine and Salt, and after taint it with the Oyntment called *Aegyptiacum*, and then lay hot upon the taint with *Flax-burds*, *Tarperntine*, *Oyl* and *Wax* mingled together, and anoint all the top of the hoof and cronet with *Bole-armenick*, and *Vinegar* : do this once a day untill the fore be whole.

CHAP. LXI.

To draw out a Stub, or Thorn.

TAKE the herb Dittany, and bruise it in a Mortar with *Black Soap*, and lay it to the fore, and it will draw out the splent, iron, thorn, or stub.

CHAP. LXII.

Of the Aubury, or Tetter.

THE *Aubury* is a bloody Wart on any part of the Horses body and the *Tetter* is a Cancerous Ulcer like it : The cure of both is with a hot iron to sear the one plain to the body, and to scarrifie the other ; then take the juyce of *Plantane*, and mixe it with *Vinegar*, *Honey*, and the powder of *Allom*, and with it anoint the fore till it be whole.

The Cure.

CHAP. LXIII.

Of the Cords or Stringhalt.

THIS is an unnatural bending of the sinews; which imperfection, a horse bringeth into the world with him ; and therefore it is certain it is incurable, and not painful, but only an eye-sore, yet the best way to keep it from worse inconvenience, is to bathe his limbs in the decoction of *Coleworts*.

CHAP. LXIV.

Of Spur-galling, or fretting the ſkin, and hair.

FOr this there is nothing better than piſs and ſalt, with which waſh the ſore daily.

CHAP. LXV.

Of healing any old Sore or Wound.

Freſh Butter, and the herb *Ameos*, chopt and beaten together to a ſalve will heal any wound or any old ſore.

CHAP. LXVI.

Of Sinews being cut.

IF the Horſes ſinews be cut, take the leaves of wild *Nep* or *Woodbine*, and beating them in a mortar with *May butter*, apply it to the ſore, and it will knit the ſinews.

CHAP. LXVII.

Of eating away any dead fleſh.

TAke *Stubwort*, and lap it in a red dock leaf, and roaſt it in the hot Cinders, and lay it to the ſore, and it will eat away any dead fleſh. So will *Verdigreaſe*, burnt *Allom*, or *Lime*. The Cure.

CHAP. LXVIII.

Of Knots in the Joynts.

Patch-greaſe applyed as before ſhewed for ſwellings, will take away any hard Knots in the fleſh, or upon the ſinews.

CHAP. LXIX.

Of venomous Wounds, as biting with a mad Dog, tuſks of Bores, Serpents or ſuch like.

FOr any of theſe mortal or venomous Wounds, take *Yarrow*, *Calamint*, and the grains of *Wheat*, and beat them in a mortar with water of *Southernwood*, and make it into a ſalve, and lay it to the ſore, and it will heal it ſafely.

CHAP. LXX.

Of Lice or Nits.

THis filthineſs of Vermine is bred in a Horſe through unnatural diſlike and poverty: The Cure is, take the juyce of *Beets* and *Stavesacre* beaten together, and with it anoint the Horſes Body over, and it will make him clean. The Cure.

CHAP.

CHAP. LXXI.

Of defending a Horse from Flyes.

Take the juyce of Pellitory of *Spain*, and mixing it with milk, anoint the Horses Belly therewith, and no Flies will trouble him.

CHAP. LXXII.

Of broken Bones, or Bones out of joynt.

After you have placed the Bones in their true places, take the *Ferofmund*, and beat it in a mortar with the Oyl of Swallows, and anoint all the members; then splent it, and roul it up, and in fifteen dayes the Bones will knit and be strong.

CHAP. LXXIII.

Of drying up sores when they be almost whole.

Allom burnt, unslak'd Lime, the ashes of an old shoosole burnt, or Oyster-shells burnt; any of these simply by themselves, will dry up any sore, though never so moyst.

CHAP. LXXIV.

A most famous Receipt to make a Horse that is lean, and full of inward sickness, sound and fat in fourteen dayes, having been often approved of.

Take of Wheat meal six pound, Anniseeds two ounces, Cummin seeds six drams, Carthamus one dram and a half, Fenugreek seeds one ounce and two drams, Brimstone one ounce and a half, Sallet oyl one pint, Honey one pound and a half, White Wine four pints; this must be made into paste, the hard simples being pounded into powder, and finely scarst, and then kneaded together, and so made into balls as big as a mans fist, then every watering consume one of those balls into his cold water which he drinketh for morning and evening for fifteen dayes together; and if at the first he be dainty to drink the water, yet care not, but let him fast till he drink it, and after he begins to take it, he will drink it with great greediness.

CHAP.

CHAP. LXXV.

How to make a white Star.

Slit the Horſes Fore-head the length of your Star, and then raiſe the Skin up with a cronet, and put in a plate of Lead as big as the Star, and let it remain ſo two or three days together: and then let it out and preſs down the Skin with your hand. that Hair will fall away, and white will come in the place: or to ſcald his Face or Skin with a ſower Apple roasted, will bring white Hair: But to make a black Star, or a red Star in a Horſes Fore-head, I refer it for you to look and approve of my *Maſter-Piece*, which belongeth only to that, for to be exactly diſcourſed of, that being only a general cure of all Cattell.

The end of the Horſe.

The general Cure and Ordering of the Bull, Cow,
Calfe or Oxe.

CHAP. I.

*Of the Bull, Cow, Calfe or Oxe, their ſhape and breed, uſe,
choice, and preſervation.*

FOr as much, as the Male of all Creatures are the principal in the breed and generation of things, and that the Fruit which iſſueth from their Seed participateth moſt with their outward ſhapes, and inward qualities, I think fitteſt in this place, where I intend to treat of Horned Cattell and Neat, to ſpeak firſt of the choice of a fair Bull, being the breeders principalleſt instrument of pro-
fit. You ſhall underſtand then, that of our Engliſh Cat-
tel, (for I will not ſpeak of thoſe in *Italy*, and other For-
rain Countries, as other Authors do, and forget mine
own) the beſt are bred in *Yorkſhire*, *Darbyſhire*, *Lancashire*,
Staffordſhire, *Lincolnſhire*, *Gloceſterſhire*, and *Somerſetſhire*,
L those

The Country
for breed.

shire, those that were bred in *York-shire*, *Darby-shire*, *Lanca-shire* and *Stafford-shire*, are generally all black of colour, and they whose blackness is purest, and their Hairs like velvet, are esteemed best; they have exceeding large horns, and very white with black tips; they are of stately shape, big, round, and well huddled together in every member, short joynted and most comely to the eye, so that they are esteemed excellent in the Market: those in *Lincoln-shire* are for the most part Pide, with more white then the other colours, their horns little and crooked, of bodies exceeding tall, long and large, lean and thin thighed, strong hoked, not apt to surbait, and are indeed fittest to labour and draught. Those in *Somerset-shire* and *Glocester-shire*, are generally of a blood red colour, in all shapes like unto those in *Lincoln-shire*, and fittest for their uses. Now to mix a race of these and the black ones together is not good, for their shapcs, and colours are so contrary, that their issues are very uncomely: therefore I would wish all men to make their breeds, either simply from one and the same kind, or else to mix *York-shire* with *Stafford-shire*, with *Lanca-shire* or *Darby-shire*, with one of the black races, and so likewise *Lincoln-shire* with *Somerset-shire*, or *Somerset-shire*, with *Glocester-shire*.

Of not mixing
and making of
races.

The shape of
the Bull.

Now for the shapes of your Bull: he would be of a sharp and quick countenance, his horns the larger the better, his neck fleshy, his belly long and large, his fore-head broad and curled, his eyes black and large, his ears rough within, and hair like Velvet, his Muzzel large and broad at the upper Lip, but narrow and small at the neather, his Nostrils crooked within, yet wide and open, his dew-lap extending from his neather Lip down to his fore-booths, large side, thin and hairy, his brest rough and big, his Shoulders large, broad and deep, his ribs broad and wide, his back straight and flat, even to the setting on of his tayle, which would stand high, his huckle bones round and fair appearing, making his buttocks square, his thighs round, his Legs strait and short joynted, his Knees round and big, his hooves or claws long and hallow, his tayl long and bush-haired, his Pisse round and also well haired. These Bulls as they are for breed, so they are excellently good for the draught, only they naturally draw better single, like horses, then in the yoke, like Oxen: the reason as I suppose being, because they can hardly be matcht in an equal manner.

The use of
Bull,

Now

Now for the Cow, you shall chuse her of the same Country ^{Of the Cow,} with your Bull, and as near as may be of one colour, only her ^{and her shape.} bag or udder would ever be white, with four teats and no more, her belly would be round and large, her forehead broad and smooth, and all other parts such as are before shewed in the male kind.

The use of the Cow is two-fold, either for the Dairy or for ^{Of her use.} breed: the Red Cow giveth the best milk, and the black Cow bringeth forth the goodliest Calfe. The young Cow is the best for breed, yet the indifferent old are not to be refused. That Cow which giveth milk longest is best for both purposes, for she which giveth milk not long, but becomes dry, looseth half her profit, and is less fit for teeming: for commonly they are subject to feed, and that straineth the Womb or Matrix.

Now for calves: there are two wayes of breeding them, the ^{Of Calves,} one to let them run with their Dams all the year, which is best ^{and their nour-} and maketh the goodliest beast: the other to take them from ^{ishing.} their Dams, after their first sucking, and so bring them up upon the finger, with flotten milk, the cold only being taken away and no more; for to give a young Calf hot milk, is present death, or very dangerous. If your Calf be calved in five dayes after the change: which is called the *Prime*, do not rear it, for most assuredly it will have the Sturdy, therefore preserve it only for the Butcher; also when you preserve those male Calves, which shall be Bulls, then geld the rest for Oxen, and the younger they are gelt ^{Observation.} the better: the best time for rearing of Calves is from *Michmas* till *Candlemas*. A Calfe would be nourished with milk twelve weeks, only a fortnight before you wean it from milk, let the milk be mixt with water. After your Calfe hath drunk one moneth, you shall take the finest, sweetest and softest hay you can get, and putting little wisps into cloven sticks, place them so as the Calfe may come to them and learn to eat Hay. After our Ladies day, when the weather is fair, you may turn your Calves to grasse, but by no means let it be rank, but short and sweet, so that he may get it with some labour.

Now of the Oxe: you shall understand that the larger are the best and most profitable, both for draught or feeding, for he is the ^{Of the Oxe} strongest to indure labour, and best able to containe both ^{and} flesh and his use.

and tallow. Now for his shape it differeth nothing from that of the Bull, only his Face would be smooth, and his Belly deeper. That Oxe is fittest for the yoke which is of gentle nature, and most familiar with the Man. In matching your Oxen for the yoke, let them be near as may be, of one height, Spirit and strength, for the stronger will ever wrong the weaker, and the duller will injure him that is of freer Spirit, except the driver be carefull to keep the dull Oxe to his labour, Oxen for the yoke would by no means be put beyond their ordinary pace: for violence in travel heats them, heat breeds surfeits, and surfeits those diseases which makes them unapt to feed or for any other use of goodness. Your Oxe for the yoke will labour well with Barley-straw or Pease-straw, and for blend fodder, which is Hay and Straw mixed together, he will desire no better feeding.

Of his Food
for labour.

Oxen to feed
for the But-
cher.

Now for your Oxe to feed, hee would as much as might be, be ever lusty and young of years; or if old, yet healthful and bruised, which you shall know by a good taile, and a good Pyzel, for if the Hair of one or both be lost, then he is a waster, and he will be long in feeding. If you do see the Oxe doth lick himself all over, it is a good sign that he is market-able and well fed, for it shews soundness, and that the Beast taketh a joy in himself: yet whilst he doth so lick himself he feedeth not, for his own pride hindereth him, and therefore the Husbandman will lay the Oxes own dung upon his hide, which will make him leave licking and fall to his Food. Now if you go to chuse a fat Beast you shall handle his hindmost Rib, and if it be soft and loose like down, then it shews the Oxe is outwardly well fed; so doth soft huckle-bones, and a big natch round and knotty: if his Cod be big and full, it shews he is well tallow'd, and so doth the crop behind the Shoulders: if it be a Cow, then handle her Navil, and if that be big, round and soft, surely she is well tallowed. Many other observations there are, but they be so well known, and common in every mans use, that they need no curious demonstration.

To preserve
Cattel in
health.

Now for the preservation of these Cattel in good and perfect health, it shall be meet that for the young and lusty, & indeed generally for all sorts, except Calves, to let them blood twice in the year, namely the Spring and Fall, the Moon being in any of the
lower

lower signs, and also to give them to drink of the pickle of *Olives*, mixed with a head of *Garlick* bruised therein; and for your Calves, be only careful that they go not too soon to grass, and small danger is to be feared. Now notwithstanding all a mans carefulness, Beasts dayly do get infirmities; and often fall into mortal extremities: peruse therefore these Chapters following, and you shall find cure for every particular disease.

CHAP. II.

Of the Feaver in Cattel.

Cattel are most subject unto a Feaver, and it cometh either from surfeit of blood, being raw and musty, or from flux of cold humors ingendred by cold keeping: the signs are trembling, heavy eyes, a foaming mouth, and much groaning: and the cure is, you shall see him bleed, and then give him to drink a quart of Ale, in which is boyled, three or four Roots of Plantane, and two spoonfulls of the best London Treacle, and let his Hay be sprinkled with Water. The Cure.

CHAP. III.

Of any inward sickness in Cattel.

FOr any inward sickness or drooping in Cattel, take a quart of strong Ale, and boyl it with a handful of Wormwood, and half a handful of Rue; then strain it, and add to it two spoonfulls of the juyce of Garlick, and as much of the juyce of Houfleeke, and as much London Treacle, and give it the Beast to drink, being no more but luke-warm.

CHAP. IV.

Of the Disease in the Head, as the Sturdy or Turning-euil.

THis disease of the Sturdy is known by a continual turning about of the Beast in one place; and the cure is to cast the Beast, and having made his feet fast, to slit the upper part of his forehead crosse-wise about four inches each way, then turning up the Skin and hying the Skull bare, cut a piece out of the Skull two inches square or more; then look, and next unto the panicle of the Brain, you shall see a bladder lye full of water and blood, which The Cure.

which you shall very gently take out, and throw away; then anoint the place with warm fresh Butter, turn down the Skins, and with a needle and a little Red silk, stich it close together; then lay on a hot Plaster of Oyl, Turpentine, Wax, and a little Rosin melted together with Flax-hurds, and so folding warm woollen cloath about the head, let the beast rise, and so remain three or four dayes ere you dress it again, and then heal it up like another wound, only observe in this cure, by no means touch the brain, for that is mortal, and then the help is both common, and most easie.

CHAP. V.

Of Diseases in the eyes of Cattel, as the Haw, a Stroak, Inflammation, Weeping, or the Pinne or Webbe.

FOr any generall soreness in the eyes of Cattel, take the water of *Eye-bright*, mixt with juyce of *Hunfleek*, and wash them therewith, and it will recover them: but if a Haw breed herein then you shall cut it out, which every simple Smith can do. But for a Stroak, Inflammation, Pin or Web, which breeds excrescences upon the eyes; take a new laid Egge, and put out half the white: then fill it up with Salt, and a little Ginger, and roste it extream hard in hot Cinders: which done, beat it to powder shell and all; but before you roast it, wrap it in a wet cloath, and put of this powder into the beasts eye, and it will heal and cure it.

CHAP. VI.

Of diseases in the mouth, as barbs under the tongue, blain on the tongue, teeth-loose, or tongue venomed.

THose Barbs, or paps which grow under the tongues of Cattel, and being inflamed do hinder them from feeding, you shall with a keen pair of sheers cut away close by the flesh, and if they bleed much, (as they will do if they be rank) you shall then with a red hot bodkin sear them, and drop on the top of the seared places a drop or two of Rosin and Butter mixt together; but if they bleed not, then only rub them with Sage Salt, and they will heal. Now for the Blain on the tongue, of some called the Tinblain, it is a blister which groweth at the

roots of the tongue, and cometh through heat of the Stomach and much chafing, & is oft very mortal, for it will rise so suddenly and so big that it will stop the wind of the Beast. The Cure is, to thrust your hand into the mouth of the Beast, and drawing out his tongue, with your nayl to break the blister, and then to wash the fore place with strong brine or Sage, Salt, and Water: if you find more blisters then one, break them all, and wash them, and it is a present cure. Now for loose teeth, you shall le: the Beast blood in his gums, and under his tayle, then wash his chaps with Sage and Woodbine leaves, boyld in brine: lastly, if the tongue be venomd, which you shall know by the unnatural swelling thereof, you shall take Plantane, and boyling it with Vinegar and Salt, wash the tongue therewith, and it will cure it. The Cure.

CHAP. VII.

Of diseases in the Neck, as being galled, bruised, swoln, out of joynt, or having the Closs.

IF any Oxes neck be galled, bruised, or swoln with the yoke: take the leaves of round *Aristolochia*, and beating them in a Mortar with Tallow or fresh Grease, anoint the fore place therewith, and it will not only heal it, but any strain in the Neck, even if the bone be a little disordered. Now for the *Closs* or *Clowse* which causeth a Beast to pill and loose the hair from his Neck, and is bred by drawing in wet and rainy weather, you shall take the ashes of an old burnt shoo, and strew it upon the Neck, and then rub it over with Tallow and Turpentine mixt together.

CHAP. VIII.

Of the Pestilence, Gaggil or Murrain in Beasts.

THis Pestilence or Murrain amongst Beasts is bred by divers occasions; as from rankness of blood, or feeding, from corruption of the air, intemperateness of the weather, inundation of floods, or the infection of other Cattel; much might be said of the violence and mortality thereof, which hath utterly unfurnished whole Countries. But to go to cure, you shall give to all your Cattel, as well the sound as the sick, this Medicine which never failed to preserve as many as have taken it. The Cure. Take of old Urine a quart, and mix it with a handful of Hens dung dissolved therein, and let your Beast drink it.

CHAP.

CHAP. IX.

Of the mifliking or leanness of Beasts.

IF your Beast fall into any unnaturall mis-like or leanness, which you shall know by the discolouring of his Hair; you shall then cause him first to be let blood, and after take sweet Butter and beat it in a Mortar, with a little *Mirr*, and the shaving of *Ivory*, and being kept fasting, make him swallow down two or three Balls thereof; and if it be in the Winter, feed him with sweet Hay; if in the Summer, put him to graze.

CHAP. X.

Of the disease in the Guts, as Flux, Costiveness, Cholick, and such like.

IF your Beast be troubled with any sore lax or bloody-Flux, you shall take a handful of the seeds of *Wood-rose*, and being dried and beaten to powder, brew it with a quart of strong Ale and give it the Beast to drink. But if he be too dry or costive in his body, then you shall take a handful of *Fennugreek*, and boyl it in a quart of Ale, and give him to drink; but for any cholick or belly-ake or gnawing of the Guts, boyl in the water which he drinketh good store of Oyl, and it will help him.

CHAP. XI.

Of pissing of blood.

IF your Beast piss blood, which cometh either of over-labouring or of hard and sower feeding, you shall take *Shepheards-purse*, and boyl it in a quart of red Wine, and then strain it, and put to it a little *Cinnamon*, and so give it the Beast to drink.

CHAP. XII.

Of dropping nostrils, or cold in the Head.

IF your Beasts nostrils run continually, which is a sign of cold in the Head, you shall take *Butter* and *Brimstone* and mixing them together, anoint two Goose-feathers therewith, and thrust them up into the nostrils of the Beast, and use thus to do every morning till they leave dropping.

CHAP. XIII.

Of any swelling in a Beast whatsoever.

IF your Beast have any outward swelling, Bath it with Oyl and Vinegar exceeding hot, and it will assuage it: but if the swelling be inward, then boyl round *Aristolochia* in his water.

CHAP. XIV.

Of the Worm in the Tayle.

THERE is a Worm which will breed in the tayl of a Beast, and doth not only keep him from feeding, but also eateth away the hair of the tayl and disfigureth the Beast. The cure is, to wash the tayl in strong Lye made of Urine and *Ash-woodashes* and that will kill the Worm, and also heal and dry up the sore.

CHAP. XV.

Of any Cough or shortness of breath in Cattel.

IF your Beast be troubled with the Cough or shortness of breath, you shall give him to drink divers morning together a spoonfull or two of Tarr, dissolved in a quart of new milk, and a Head of Garlick clean pill'd and bruised.

CHAP. XVI.

Of any Imposthume, Bile or Botch in a Beast.

IF your Beast be troubled with any Imposthume, Bile or Botch, you shall take Lilly-roots and boyl them in milk till they be soft, so that you may make them like pap: then being very hot clap them to the sore, and then when it comes to be soft, open it with a hot iron, and let out the filth, then heal it up with Tarr, Turpentine and Oyl mixt together.

CHAP. XVII.

Of diseases in the Sinews, as weakness, stiffness or soreness.

IF you find by the unaimble going of your Beast, that his Sinews are weak, shrunk or tender: Take *Mallows* and *Chick-weed* and boyl them in the Dregs of Ale or in Vinegar, and being

very hot, lay it to the offended member, and it will comfort the sinews.

CHAP. XVIII.

Of the general Scab, particular Scab, Itch or Scurff in Cattel.

IF your Beast be troubled with some few Scabs here and there on his body, you shall rub them off, and anoint the place with black Sope and Tarr, mixt together, and it will heal them. But if the Scab be universal over the body, and the Scabs mixt with a dry Scurff, then you shall first let the Beast bleed, after rub off the Scabs and Scurff till the Skin bleed, then wash it with old Urine and green Copperas together, and after the bathing is dry, anoint the Body with Bores grease and Brimstone mingled together.

CHAP. XIX.

Of the hide-bound, or dry skin in Cattel.

THIS grief cometh of over-much labour and evil keeping, and above all other Beasts your *Lincoln-shire Oxen* are subject unto it, the signs are a discoloured and hard Skin, with much leanness: the cure is, to let him bleed, and to give him to drink a quart of good strong Ale brewed with *Mirr*, and the powder of *Bay-berries*, or for want of Berries the Bay-tree leaves; and then keep him warm & feed him with Hay that is a little mow-burnt and only looketh red, but is not dully or mouldy, for that will get him an appetite to drink, and drinking will loosen his Skin.

The Cure.

CHAP. XX.

Of the diseases in the Lungs, especially the Lung-grown.

THE Lungs of a Beast are much subject to sickness, as may appear by much panting, and shortness of breath, the signs being a continual coughing, but that which is before prescribed for the Cough will cure all these, only for a Beast which is Lung-grown, or hath his Lungs grown to his side, which cometh through some extreme drought taken in the Summer season, and is known by the Cough, hoarse, or hollow coughing; you shall take a pint of *Tanners oze*, and mix it with a pint of new milk, and

and one ounce of brown Sugar Candy, and give it the Beast to drink, this hath been found a present cure; or to give him a ball as big as a mans fist, of Tar and Butter mixt together, is a very certain cure.

CHAP. XXI.

Of biting with a Mad Dog, or any other venomous Beast.

IF your Beast be bitten with a mad Dog, or any other venomous Beast, you shall take *Plantane*, and beat it in a Morter with *Bole-armonick*, *Sanguis Draconis*, Barley meal, and the whites of Eggs, and plaister-wise lay it to the fore, renewing it once in fourteen hours.

CHAP. XXII.

Of the falling down of the Palate of a Beasts mouth.

LAbour and drought will make the Palate of a Beasts mouth to fall down, which you shall know by a certain hollow changing in his mouth when he would eat, also by his sighing and a desire to eat but cannot. The ordinary cure is, you shall cast the The Cure. Beast, and with your hand thrust it up; then let him blood in the palate, and anoint it with Honey, and Salt; and then put him to graze, for he may eat no dry meat.

CHAP. XXIII.

Of any grief or pain in the hoof of a Beast, and of the Foule.

Take *Mugwort*, and beat it in a Mortar with hard *Tallow*, and apply it to the hoof of the Beast, and it will take away any grief whatsoever. But if he be troubled with that disease, which is called the *Foule*, and comes most commonly by treading in a mans ordure, it breedeth soreness & swelling between the cloyes: you shall for the cure cast the Beast, and with a Hay rope rub him so hard between the same, that you may make him bleed, then The Cure. anoint the place with *Tarr*, *Turpentine*, and *Kitchin-fee*, mixt together, and keep him out of the dirt, and he will soon be whole.

CHAP. XXIV.

Of bruifings in general, on what part of the body soever they be.

TAKE *Brooklime* the less, and fry it with Tallow, and so hot lay it to the bruise, and it will either expel it, or else ripen it, break it, and heal it, as hath been often approved.

CHAP. XXV.

Of swallowing down Hens-dung, or any poysonous thing.

IF your Beast have swallowed down Hens-dung, Horse-leeches, or any other poysonous thing, you shall take ap intof strong Vinegar, and half so much Oyl: or sweet Butter, and two spoonfulls of *London-Treacle*; and mixing them together on the fire give it the Beast warm to drink, and it will cure him.

CHAP. XXVI.

Of killing Lice or Ticks.

The Cure.

BEASTS that are bred in Woods under dropping of Trees, or in barren and unwholesome places are most subject to Lice, Ticks, and other Vermine. The cure whereof is to anoint their body with fresh Grease, Pepper, Stavesaker and Quicksilver, beaten together untill the Quicksilver be slain.

CHAP. XXVII.

Of the Dewboln, or general Gargil.

HOWsoever some of our *English* Writers are opinioned, this *Dewboln* or general *Gargil*, is a poysonous and violent swelling, beginning at the neather part of the *Dewlap*; and if it be not prevented, the swelling will ascend upward to the Throat of the Beast, and it is incurable: therefore for the preservation of your Beast, as soon as you see the swelling appear, cast the Beast and slit the swelled place of the *Dewlap*; at least four inches in length; then take a handful or two of *Speare-grass*, or *Knot-grass* and thrusting it into the wound, sitch it up close; then anoint it with *Butter* and *Salt*, and so let it rot and wear away of it self: if you perceive that his body be swell'd, which is a sign that the poyson is disperfed inwardly, then it shall be

good

good to give him a quart of *Ale* and *Rue* boyl'd together, and so to chafe him up down well, both before and after.

CHAP. XXVIII.

Of loss of the Cud.

A Beast will many times through carelesness in chewing, lose his Cud, and then mourn and leave to eat: The certain cure whereof is to take a little sower *Leaven* and *Salt*, and beating it in a mortar with mans *Urine* and *Lome*, make a pretty big ball and force him to swallow it down, and it will recover his Cud.

The Cure.

CHAP. XXIX.

Of killing of all sorts of Worms, either in the Oxe, Cow or Calfe.

THere is nothing killeth Worms in the bodies of Cattel sooner then *Savin* chopt small, and beaten with sweet *Butter*, and so given in round balls, to the Beast; nor any thing maketh them void them so soon as sweet *Wort* and a little black *Sope*, mixt together, and given the Beast to drink.

CHAP. XXX.

Of the vomiting of Blood.

THis disease cometh of the rankness of blood got in Fruitful Pastures after hard keeping, insomuch that you shall see the blood flow from their mouths. The cure is, first to let the Beast blood, and then give to drink *Bole-armenick* and *Ale* mixt together.

The Cure.

CHAP. XXXI.

Of the Gout in Cattel.

IF your Beast be troubled with the Gout, which you shall know by the sudden swelling of his joynts, and falling again, you shall take *Galingall*, and boyl it in the dregs of *Ale* and sweet *Butter*, and Pultis-wise lay it to the offended member.

CHAP. XXXII.

Of Milking of a Beast.

Milking is when a Beast will oft fall, and oft rise, as he is at his labour, and cannot indure to stand any while together it proceeds from some stroke or bruise, either by cudgil or other, blunt weapon: And the cure is, not to raise him suddenly, but to give him *Ale*, and some stone *Pitch* mixt very well together to drink.

CHAP.

CHAP. XXXIII.

Of provoking a Beast to piss.

IF your Beast cannot piss, steep *Smallage*, or the roots of *Radish* in a quart of *Ale* and give it him to drink, and it present'y helpeth.

CHAP. XXXIV.

Of over-flowing of the Gall in Beasts.

THe over-flowing of the Gall, is ever known by the yellowness of the Skin, and the eyes of the Beast: And the cure is, to give him a quart of Milk, Saffron and Turmerick mixt together to drink after he hath been let blood, and so do three mornings together.

CHAP. XXXV.

Of a Beast that is goared, either with Stake, or the horn of another Beast.

TAke *Turpentine* and *Oyl*, and heat them on the Coals, and then taint the wound therewith, and it will heal it.

CHAP. XXXVI.

Of a Cow that is withered.

THis disease is; when a Cow after her calving cannot cast her cleaning, and therefore to compel her to cast it, you shall take the juyce of *Betony*, *Mugwort* and *Mallows*, of each three spoonfuls, and mix it with a quart of *Ale*, and give it the Beast to drink: and also give her to eat scorched Barley, and it will force her to avoid her burthen suddenly.

CHAP. XXXVII.

Of drawing out stubs or Thorns.

TAke black Snails and black Sope, and beat them to a salve, and apply them to the sore, and it will draw the grief to be apparent.

CHAP. XXXVIII.

Of purging of Cattle.

THere is nothing doth purge a Beast so naturally, as the green weedy grass which groweth in Orchards under trees, nor any Medicine doth purge them better than *Larr*, *Butter*, and *Sugar-Candy* mixt together, and given in balls as big as an Hens Eg.

CHAP. XXXIX.

Of being shrew-run or shrew-bitten.

A Shrew Mouse, which is a Mouse with short uneven legs, and a long head like a Swines, is venomous, and if it bite a Beast, the sore will swell and rankle, and put the Beast in danger: but if it only run over a Beast; it feebleth his hinder parts, and maketh him unable to go: The cure then for being shrew-bitten is the same which is formerly shewed for the biting of other venomous Beasts; But if he be shrew-run, you shall only draw him under, or beat him with a bramble, which groweth at both ends in the Furrows of Corn lands.

CHAP. XL.

Of faintness in Labour.

IF your Beast in his Labour, and heat of the day chance to faint you shall loose him, and drive him to the running stream to drink, and then give him two or three Ospines full of parch'd Barley to eat, and he will labour fresh again.

CHAP. XLI.

Of breeding Milk in a Cow.

IF your Cow after her Calving cannot let down her Milk; you shall give her a quart of strong Posset-Ale, mixed with *Anni-seeds* and *Celiander-seeds*, beaten to powder, to drink every morning, and it will not only make her Milk spring, but also increase it wonderfully.

CHAP. XLII.

Of Bones out of joynt, or bones broken.

IF any Beast have a bone broken, or misplaced, after you have set it right, and in his true place, you shall wrap a plaister about it made of *Burgundy-Pitch*, *Tallow* and *Linseed-oyl*, and then splent it, and let it remain unbound 15 days, and it will do much good.

CHAP. XLIII.

Of the Rot in the Beasts.

IF your Beast be subject to rottenness, which you may know by his leanness, mislike, and continually scowring behind: you shall take *Bay-berries*, beaten to powder, *Mirth*, *Ivy-leaves*, *Elder-leaves* and *Feather-sew*, a good lump of dry Clay, and Bay-salt, mix these together in strong Urine, and being warm, give the

the Beast half a pint thereof to drink, and it will knit and preserve them.

CHAP. XLIV.

Of the Pantas.

THe Pantas is a very faint disease, and maketh a Beast to sweat, shake, and pant much. The cure is, to give him Ale and Urine mixt together, a little foot and a little earning to drink two or three mornings before you labour him.

CHAP. XLV.

Of all manner of Wounds in Beasts.

TO cure any Wounds in Beasts, given by edge-tools, or otherwise, where the Skin is broke; take Hogs-grease, Tarr, Turpentine and Wax, of each a like quantity, and a quarter so much Verdigrease, and melt them altogether into one salve, and apply it to the wound, by spreading it upon a Cloth, and it will heal it without any rank or dead flesh.

The end of the Bull, Oxe, Cow and Calfe, &c.



Of Sheep.

CHAP. I.

Of Sheep in general, their use, choice, shape and preservation.

TO enter into any long discourse of praise or profit of sheep, or to shew my reading by relation of the Sheep of other Countries, were frivolous; because I am to write much in a very little Paper, & I speak only to my Countrey-men, the *English*, who desire to learn & know their own profit. Know them that

that whosoever will stock himself with good Sheep, must look into the nature of the soile in which he liveth : for Sheep according to the earth and air in which they live, do alter their nature and properties, the barren Sheep becoming good in good soiles, and the good Sheep barren in evil soils. If then you desire to have Sheep of a curious fine staple of wooll, from whence you may draw a thread as fine as silk, you shall see such in *Herefordshire*, about *Lempster* side, and other special parts of that County; in that part of *Worcestershire* joyning upon *Shropshire*, and many such like places : yet those sheep are very little of bone, black faced, and bear a very little burthen. The Sheep upon *Cotwal* hills are of better bone, shape, and burthen, but their staple is courser and deeper. The Sheep in that part of *Worcestershire*, which joyneth on *Warwickshire*, and many parts of *Warwickshire*, all *Leicestershire*, *Buckinghamshire*, and part of *Northamptonshire*, and that part of *Nottinghamshire* which is exempt from the Forrest of *Sherwood*, beareth a large boned sheep of the best shape, and deepest staple, chiefly if they be Pasture-Sheep, yet is their wool courser than that of *Cotwal*. *Lincolnshire*, especially in the salt Marishes have the largest Sheep, but not the best Wool, for their legs and bellies are long and naked, and their staple is courser than any other. The Sheep in *Yorkshire*, and so Northward, are of a reasonable big bone, but of a staple rough and hairy, and the *Welsh* Sheep are of all the worst, for they are both little and of worse staple, and indeed are praised only in the dish, for they are the sweetest Mutton.

If now, knowing the natures and properties of the Sheep of every Country, you go about to stock your ground, be sure to bring your Sheep from a worse soil to a better, and not from a better to a worse. The Lear, which is the earth on which a Sheep lyeth, and giveth him his colour, is much to be respected: the red Lear is held the best; the duskyish, inclining to a little redness, is tolerable; but the white or dirty Lear is stark naught. In the choice therefore of your Sheep, chuse the biggest boned, with the best wooll; the staple being soft, greasie, well curled, and close together, so that a man shall have much ado to part it with his fingers. These Sheep besides the bearing of the best burthen, are always the best Butchers ware, and go soonest away in the Market.

Of the choice
of Sheep.

Of the Lear.

The shape of a
Sheep.

ket. Therefore in the choice of sheep for your breed, have a principal respect to your Rams, for they ever mar or make a flock: let them as near as you can have these properties or shapes. First, large of body in every general part, with a long body, and a large belly, his forehead would be broad, round and well rising, a cheerful large eye, strait short nostrils, and a very small muzzel; by no means any horns, for the dodder sheep is the best breeder, and his issue never dangereth the Dam in yeaning, as the horned sheep do: besides, those sheep which have no horns, are of such strength of head, that they have oft been seen to kill those sheep which have the largest horns, and best wrinkled. A Sheep would have a large upright neck, somewhat bending like the neck of a horse, a very broad back, round buttocks, a thick tail, and short joynted legs, small, clean, and nimble, his wooll would be thick and deep, covering his belly all over, also his face, and even to his nostrils, and downward to his very knees and hinder houghs. And thus according to the shape, propertie, and soil from whence you choose your Rams, choose the rest of your flock also.

When Ewes
should bring
forth.

The best time for your Ewes to bring forth their young ones is, if they be pasture sheep, about the latter end of *April*, and so untill the beginning of *June*; but if they be field-sheep, then from the beginning of *January* till the end of *March*, that their Lambs may be strong and able before *May* day, to follow their Dams over the rough Fallow-lands, and Water-furrows, which weak Lambs are not able to do: and although you yeane thus early in the Winter, when there is no grass springing, and the sharpness of the weather also be dangerous, yet the husbandman must provide shelter and sweet fodder, and the Shepherd with great vigilance be stirred at all hours, to prevent evils, for the reasons before shewed, and though the Ewe at the first be scant of Milk, yet as the warm weather increaseth, and the grass beginneth to spring, so will her milk spring also.

Ordering
Lambs.

Now for your Lambs: about *Michaelmas* you shall separate the male from the female; and having chosen out the worthiest, which you mean to keep for Rams, put them aside, and then gueld the rest, which every orderly Shepherd can do sufficiently, for there is no danger in guelding young Lambs. The first year a male Lamb is called a Weather-hog, and a female Lamb

an Ewe-hog : the second year the male is a Weather , and the female a Theafe, and then she may be put to the Ram : but if you let her go over that year also, then she is a double Theafe, and will both her self be the goodlier sheep, and also bring forth the goodlier Lamb ; whence it comes, that the best Sheep-masters, make more account of the double Theafe, than of any other breeder.

You shall observe , never to shear your Lambs till they be full hogs : you shall ever wash three dayes before you shear : the best time of shearing is from *June* to *August*. Ewes are ever good breeders from three years old till their mouths break. If you would have your Ewes bring forth male Lambs, note when the North-wind bloweth, and driving your flock against the wind, let your Rams ride as they go, and this will make the Ewes to conceive male Lambs. So likewise , if you would have female Lambs, put your Rams to the Ewes when the wind bloweth out of the South.

Now for the general preservation of Sheep, feed them as much as you can upon high grounds, which are dry and fruitful , the grass sweet, yet so short that it must be got with much labour ; but if you must force per-force feed upon low and moist grounds which are infectious, you shall not bring your Sheep from the Fold, (for I now speak to the honest English husbandman) untill the Sun be risen, and that the beams begin to draw the dew from the earth ; then having let them forth , drive them to their place of Feed, and there with your dog chase them up and down till they be weary, and then let them either feed or take their rest, which they please. This chasing first, beateth away Mill-dews, and all other dews from the earth, as also those webs, kells, and flakes, which lying on the earth, and a Sheep licking them up, do breed rottennells. Also this chasing stirreth up that natural heat in a Sheep, which drinketh up, and wasteth the abundance of moisture , which else would turn to rottennells. Besides, a Sheep being thus chased and wearied, will fall to his food more deliberately, and not with such greediness, as otherwise he would, and also make choice of that meat which is best for his health. If a Shepherd once in a month, or alwayes when he hath occasion to handle his Sheep, rub their mouths with Bay-salt, it

is an excellent preservation against all manner of sickness, and very comfortable for a Sheep also, for a Sheep will very well live and abate of his flesh, by rubbing his mouth once a day with Bay-salt only. Now forasmuch as notwithstanding these principles, a Sheep falleth into many infirmities, hereafter followeth the several cures of all manner of diseases.

CHAP. II.

The signs to know a sound sheep, and an unsound sheep.

IF a Sheep be sound and perfect, his eye will be bright and cheerful, the White pure without spot, and the strings red, his gums also will be red, his teeth white and even, his skin on his brisket will be red, and so will each side betwixt his body and his shoulder where wool grows not, his skin in general will be loose, his wool fast, his breath long, and his feet not hot: but if he be unsound, then these signs will have contrary faces; his eyes will be heavy, pale, and spotted, his breast and gums white, his teeth yellow and foul, his wool when it is pulled will easily part from his body, and when he is dead open him, and you shall find his belly full of water, his fat yellow, his liver putrified, and his flesh moist and waterish.

CHAP. III.

Of sickness in general, or the Fever amongst Sheep.

CHange of pasture is a great cure for sick Sheep; yet if you find any more particularly troubled than the rest, take *Pulio-Royal*, and stamping it, mix the juice with water and vinegar the quantity of half a pint, and give it the Sheep with a horn, luke-warm; and by no means let the Sheep be much chased. Also in these sicknesses the Shepherd must have a great care to note from whence the disease groweth: if it proceed from cold, then to drive his sheep to shelter; if from heat, then to feed them in shady cool places.

CHAP. IV.

Of the general Scab or Itch in Sheep.

THe general scab or Itch in Sheep, is of all diseases the most common among them, proceeding from rainy and wet weather, which falling upon their skins, if they happen to be chafed or heated after, they presently break forth into the scabs, which you shall know by a white filthy scurf sticking upon their

their skins. And the most usual medicine for the same, which all Shepherds use, is to anoint the place with Tar and Grease mixt together; but if upon the first appearance of the itch you steep *Pulvis-Royal* in water, and wash the skin therewith, it will preserve them from running into the scab.

CHAP. V.

Of killing Maggots in Sheep.

IF a Sheep be troubled with Maggots, you shall take *Goose-grease, Tar, and Brimstone*, and mixe them together on the fire; and then anoint the place therewith, and it will kill the Maggots.

CHAP. VI.

Of the Red Water.

THE Red water is a poisonous disease in Sheep, offending the heart, and is indeed as the pestilence amongst other cattel, therefore when you find any of your Sheep infected therewith, you shall first let him bleed in the foot between the claws; and also under the tail, and then lay to the sore places *Rew* or *Wormwood* beaten with Bay-salt, and it helpeth.

CHAP. VII.

Of Lung-sick, or any Cough or Cold.

IF your Sheep be troubled with any sickness in his Lungs, which you shall know by his coughing and shortness of breath, you shall take *Fussilago, or Colts-foot* and *Lung-wort*, and stamping them, strain the juice into a little honey and water, and give it the Sheep to drink.

CHAP. VIII.

Of the Worm in the Claw of the Sheep, or any other part.

THIS Worm breedeth commonly before, between the Claws of the foot: but wheresoever it breedeth it is known by the head, which is like a tuft of hair, and will stick forth in a bunch. The cure is to stir the foot, and draw out the worm without breaking it, and then anoint the place with Tar and Tallow mixt together, for Tar simply of it self will draw too much. The Cure.

CHAP. IX.

Of the Wild-fire in Sheep.

THIS disease, which is called the Wild-fire, is a very infectious sickness, and will endanger the whole flock, but howsoever incurable.

incurable it is held, yet it is certain, that if you take *Chervile*, and stamping it with old *Ale*, make a salve thereof, and annoint the fore therewith, it will kill the fire, and set the Sheep safe: and though some for this disease bury the first infected Sheep alive, with his heels upward, before the Sheep-coat door, yet this medicine hath ever been more effectual.

CHAP. X.

Of the disease of the Gall, as Cholera, Jaundice, and such like.

The Cure.

THese diseases are known by the yellowness of the Sheeps skin: and the cure is, to take *Plantane* and *Lettuce*, and stamping them together, mix their juice with vinegar, and give half a pint to a Sheep to drink.

CHAP. XI.

Of the tough flegm, or stopping in Sheep.

IF your Sheep be stopt in the head, brest, or weasand, either with tough flegm, or other cold humours, which you shall know by the running of the nostrils; then take the powder of *Puliot-royal*, and mixing it with clarified hony, dissolve it in warm water, the quantity of half a pint, and give it the Sheep to drink, and it will loosen the flegm.

CHAP. XII.

Of bones broken in Sheep, or bones out of joynt.

IF your Sheep chance to break a leg, or have any other bone misplaced, you shall after you have set it straight and right again, first bath it with oyl and wine, and then dipping a cloath in molten *Patchgrease*, roul it about, and splint is as occasion shall serve, and so let it remain nine dayes, and dress it again, and at the end of the next nine dayes the Sheep will be able to go.

CHAP. XIII.

Of any sickness in Lambs.

IF your Lamb be sick, you shall give it *Mares-milk* or *Goats-milk*, or the own Dams milk and water to drink, and keep it very warm.

CHAP.

CHAP. XIV.

Of the Sturdy, turning-evil, or More-found.

THese diseases proceed from rankness of blood, which offendeth the brain, and other inward parts. The cure then is to let the Sheep blood in the eye-veins, temple-veins, and through the nostrils, then to rub the places with young Nettles bruised. The Cure.

CHAP. XV.

Of diseases in the eyes, as the Haw, dimness, or any soreness.

IF your Sheep have any imperfection in his eyes, you shall drop the juice of *Selandine* into them, and it is a present help.

CHAP. XVI.

Of water in a Sheeps belly.

IF a Sheep have water in his belly between the outward flesh and the rim, then you may safely adventure to let it forth by making a little hole through the flesh, and putting in a quill; but if it be between the rim and the bag, then it is incurable, for you may by no means cut the rim asunder. When the water is let forth, you shall stitch up the hole, and anoint it with Tar and Butter mixed together: this water if it remain in the body, will rot the sheep.

CHAP. XVII.

Of the Tag'd or Belt in Sheep.

A Sheep is said to be Tag'd or Belt, when by a continual squirt running out of his ordure, he berayeth his tail in such wise, that through the heat of the dung it scaldeth and breedeth the scab therein. The cure is, with a pair of sheers to cut away the tags, and to lay the fore bare and raw, and then to throw earth dried upon it, and after that Tar and Goose-grease mixt together. The Cure.

CHAP.

CHAP. XVIII.

Of the Pox in Sheep.

The Cure.

THE Pox in Sheep are small red pimples like Purples rising on the skin, and they are infectious. The cure is, to take *Rosemary*, and boil the leaves in vinegar, and bath the sores therewith, and it will heal them. Change of pasture is good for this disease, and you shall also separate the sick from the sound.

CHAP. XIX.

Of the Wood-Evil, or Cramp.

The Cure.

THIS disease is weakness or straitning of the sinews got by colds and surfeits: it is very mortal, and will run through a whole flock. The cure, is to take *Sinkfoil*, or *Five-led grass*, and boil in Wine, and give the Sheep a pint thereof to drink, and keep him warm, and chafe his legs with oyl and vinegar.

CHAP. XX.

Of making an Ewe to love her own Lamb, or any other Ewes Lamb.

IF an Ewe grow unnatural, and will not take her Lamb after she hath yeaned it, you shall take a little of the Clean of the Ewe, which is the bed in which the Lamb lay, and force the Ewe to eat it, or at least chew it in her mouth, and she will fall to love it naturally. But if an Ewe have cast her Lamb, and you would have her take to another Ewes Lamb, you shall take the Lamb which is dead, and with it rub and daub the live Lamb all over, and so put it to the Ewe, and she will take as naturally to it, as if it were her own.

CHAP. XXI.

Of licking up Poyson.

The Cure.

IF a Sheep chance to lick up any poyson, you shall perceive it by a sudden swelling and reeling of the Sheep. And the cure is, as soon as you see it stagger, to open the mouth, and you shall find one or more blisters upon the tongues root, you shall presently break them with your fingers, and rub them with earth or Sage, and then piss into the Sheeps mouth, and it will do well.

CHAP.

CHAP. XXII.

Of Lambs yeaned sick.

IF a Lamb be yeaned sick and weak, the Shepheard shall fold it up in his cloak, blow into the mouth of it, and then drawing the Dams dugs, squirt milk into the mouth of it.

CHAP. XXIII.

Of making an Ewe to be easily delivered.

IF an Ewe can hardly bring forth or yeane her Lamb, you shall take *Balsamint* or *Horsemint*, and put either the juyce or powder of it into a little strong ale, and give it the Ewe to drink, and she will yeane presently.

CHAP. XXIV.

Of teeth loose.

IF a Sheeps teeth be loose, let him blood in his gums, and under his tayl, and then rub his teeth with Earth, Salt and Sage.

CHAP. XXV.

Of increasing Milk in Ews.

Nothing encreaseth Milk in Ewes more than change of pasture and feeding: driving them one while unto the hills, another while to the Valleys; and where the grass is sweetest and short, and the sheep eateth with best appetite, there see you continue longest: for touching, giving them *Fitches*, *Dill*, *Anniseeds*, and such like, this change of ground will make Milk spring much better.

CHAP. XXVI.

Of the staggers, or leaf sickness in Lambs, or elder Sheep.

THe Staggers is ingendered in sheep by surfeiting on Oak-leaves, hawthorn leaves, or such like, which Lambs are very apt unto: it is cold corrupt blood, or flegm, gathered together about the brain: indeed it is suddenly mortal. The best cure is, to take *Assafetida*, dissolved in warm water, and put the quantity of half a spoonful into each ear of the sheep or Lamb, and it is a present remedy. The Cure.

CHAP. XXVII.

Of Worms in the guts of Sheep or Lambs.

Sheep are as subject to worms in their guts or stomachs as any other cattel whatsoever, which you shall know by beat-

The Cure.

ting their bellies with their feet, and by looking continually at their bellies. The cure is, to take the leaves of *Coliander*, and to stamp them, and then mixing the jayce thereof with hony, to give the Sheep to drink; and then chase him a little, and keep him two or three hours fasting.

CHAP. XXVIII.

Of the loss of the Crud.

THat which helpeth the loss of the Crud in Ox or Cow the, same is a present remedy for Sheep, and is spoke of before in a former chapter.

CHAP. XXIX.

Of saving Sheep from the Rot.

THIS disease of Rottenness is the cruellest of all other amongst Sheep, and extendeth his violence over all the flock: Nay, over Town-ships and Countries; and though it be held of most men incurable, yet good Government, and this Receipt I shall deliver you, will not only prevent it, but preserve your Sheep safe: Therefore, as soon as you perceive that any of your Sheep are tainted, you shall take *Adraces*, which is a certain salt, gathered from the salt Marthes, in the heat of Summer, when the tide is going away, and leaving certain drops of salt water on the Grass, then the violent heat of the Sun turns it to salt; and to speak briefly, all salt made by the violence of the Suns heat only, is taken for *Adraces*, of which there is infinite store in Spain. With this *Adraces* rub the mouths of all your sheep once a Week, and you shall never need to fear the rotting of them, for it hath been well tried, and as I imagine, the experiment is found out from this very ground: It is a rule and well known at this day in *Lincolnshire*, and in *Kent*, that upon the Salt Marthes, sheep did never dye of the rot: no other reason being known therefore, but the licking up of that salt, and without doubt, it is most infallible and most easie.

CHAP. XXX.

A few Precepts for the Shepheard.

IT is meet that very good and careful Shepheards know what food is good for Sheep, what hurtful: that following the one, and eschewing the other, he may ever keep his cattel in good health.

health. The grasse that is most wholsome for Sheep, is that which hath growing in it good store of *Mellilot*, *Claver*, *Self-beal*, *Cinquefoil*, *Broom*, *Pimpernel*, and white *Henbane*.

The grasse which is unwholsome for Sheep, is that which hath growing amongst it, *Sparewort*, *Pennywort*, or *Pennygrasse*, and any weeds which grow from inundation or over-flows of water; likewise, *Knot-grasse* is not good, nor mildewed grasse. Of all Rots, the hunger Rot is the worst, for it both putrieth the flesh and skin, and this most incident to field Sheep, for to pasture Sheep it never hapneth. The next Rot to it is the pelt Rot, which commeth by great store of Rain, immediately after a Sheep is new shorn, which, mildewing the skin, corrupteth the body; and this also is most incident to field Sheep, which want shelter.

There be little white Snails which a Sheep will lick up, and they will soon rot him.

There will grow upon Ewes teats little dry scabs, which will stop their milk, when the Lambs suck; the Shepheard must have a care to pull them away.

A Sheep will have a bladder of water under his chin sometimes which the Shepheard must be careful to let out and lance, or the Sheep will not prosper.

It is not good to shear Sheep before Midsummer, for the more hee sweateth in his Wool, the better and more kindly it is.

If you will know the age of your Sheep, look in his mouth; and when he is one shear, he will have two broad teeth afore: When hee is two shear, he will have four broad teeth afore: when he is three, he will have six; and when he is four shear, he will have eight: and after those years his mouth will begin to break: For touching that Rule of the evenness and unevenness of the mouth, it is uncertain, and faileth upon many occasions.

The end of the Sheep.



Of Goats.

CHAP. I.

Of Goats and of their Natures.

SFeing Goats are not of any general use in our Kingdoms, but only nourished in some wild and barren places, where cattle of better profit can hardly be maintained, as in the mountainous parts of *Wales*, in the barrenest parts of *Cornwal* and *Devonshire*, on *Malborn* hills, and some few about the *Peak*; I will not stand upon any large discourse, but as briefly as I can, give you the natures and cures. You shall then know, that the Goat is a beast of a hot, strong, and lusty constitution; especially in the act of generation; that they exceed all other cattle; delight to live in mountains that be high, craggy, and full of bushes, bryars, and other wood, they will feed in any plain pastures, but their special delight is in brousing upon Trees, they are so nimble of foot that they will go in places of greatest danger. The profit which comes from them is their milk, which is an excellent restorative, and their Kids which are an excellent Venison. They are in other countries, as in *Spain*, the Islands of *Azores*, and the Islands of the *Canaries*, preserved for the chase and for hunting, as we preserve our Deer both Red and Fallow, and make excellent pastime.

The Nature
of Goats.

His Shape.

For the shape of the Goat: he would have a large body, and well haired, great legs, upright joints, not bending, a neck plain and short, a head small and slender, large horns, and bending, a big eye, and a long beard, and his colour white, black, or pice. Some do use to shear them, to make rough mantles of: but it is not so with us in *England*. The she Goat would have large teats and a big udder, hanging ears, and no horns, as they have in many places.

The ordering
of Goats.

These Goats would be kept in small flocks, or herds, as not above

above a hundred in a herd: As they must in the heat of Summer have much shade, so in the Winter likewise much shelter: for they can neither endure extremity of heat nor cold, especially, the violence of winter, for that will make the she Goat cast her Kid, or bring it forth untimely. These love Mast well, but yet you must give them other food to mix with it. The best time to let the Male and Female go together, is about the beginning of *December*. If you house your Goats in the winter, let them have no Litter to lye on, but the floor paved, or gravelled, for otherwise their own heat will annoy them: they must also be kept very cleanly, for they can indure no filthy savours. For the young Kids, you shall in all parts order them as you do your Lambs.

Now for their preservation, if they be suffered to go and chuse their own food, they are to themselves so good Physicians, that they will seldome or never be troubled with any inward sickness; only the unnatural excess of their lust maketh them grow soon old, and so both past use and profit. For those particular diseases which accidentally fall upon them: here followeth the cures.

CHAP. II.

Of the Pestilence in Goats, or any inward and bidden sickness.

IF you perceive your Goats do droop, or look with sullen or sad countenances, it is an assured sign of sickness; but if they foam or Lather at the mouth, then it is a sign of the Pestilence. The cure is, first, to separate them from the sound, then to let them bleed, and give them the Buds and Leaves of *Celandine*, with rushes and reeds to eat, and it is a present remedy. The Cure.

CHAP. III.

Of the Dropfie in Goats.

GOats are very much subject unto the Dropfie, through their excess of drinking water, the sign whereof is a great inflammation and heat in the skin: the cure is, to seeth Wormwood in Water and Salt, and give a pint thereof to a Goat to drink divers mornings; for to slit and let out the water under the shoulder, is not so certain and safe a cure. The Cure.

CHAP.

CHAP. IV.

Of stopping the Teats.

The Cure.

THere will ingender in the teats of Goats, a certain tough hard flegm, which will stop the milk from issuing: which to cure, you shall with your finger and your thumb pull it away, and then anoint the place with hony, and the Goats milk mixt together.

CHAP. V.

Of Goats that cannot Kid.

GOats above all other cattle, are troubled with hardness in Kidding, by reason that if they be chased or hunted their Kids will turn in their bellies: the remedy then to preserve them from that danger, is to keep them quiet and untroubled, untill they have Kided.

CHAP. VI.

Of the Tetter, or dry Scab in Goats.

TO heal any Tetter, or dry scab in Goats, take *Black Soape, Tar, Hogs-grease,* and *Brimstone*, mix them well together and anoint the sores therewith, and it will heal them.

CHAP. VII.

Of Gelding Kids in the Summer season.

Kids being Gelt in the Summer season, as those which are late kided must necessarily be; the flye will be so busie with the sore, that with their blowings they will breed such store of Maggots in the wound, that it will indanger their lives: to defend them then from such annoyance of the flye, you shall take Soot, Tar, and thick Cream, and mix them well together, and anoint the wound therewith, and it will both heal it and keep the flye away.

CHAP. VIII.

Of the Itch in Goats.

IF your Goats be troubled with an Itch, so that they cannot feed for clawing or biting themselves, you shall wash their skins with old Chamber-lye, and green Copperras well boyled together, and it will kill the Itch.

CHAP. IX.

Of the Tuel stopping in Goats.

GOats, when they are sucking on their dams, or when they are new Kiddled, will commonly have a great lax or squirt, so that the ordure which cometh from them, if it be not well clenfed and taken from them, it will with their own natural heat so bake and dry, that it will stop the Tuels, so that they cannot dung, which if it be not holpen, the Kid will dye. The cure The Cure. is to cleanse the place, and open the Tuel, and then put into it an inch or thereabout of a small Candles end dipt in hony, and then anoint all the Tuel over with Capons-grease.

CHAP. X.

Of the Staggers, or reeling evil in Goats.

IF your Goats be troubled with the Staggers or Reeling evil, which is a disease bred in them by the violent heat of the Sun, you shall take *Bay-salt* and *Verjuice*, and mix them together, and give the Goat half a pint thereof to drink: or else take *Houfe-leek*, and *Dragons*, of each a like: so grounds of *Ale* with a little new *Milk*: stamp the herbs, and then mingle them together, then put thereto a few *geves* grossly beaten, and then boil it again, then cool it, and give the sick Goat three or four spoonfuls thereof to drink, and it will cure her. Now for any other infirmities which shall happen unto Goats. you may cure them with the same medicines which you cure sheep, for their natures do not much differ.

The end of the Goat.

*Of Swine.*

CHAP. I.

Of all manner of Swine, their natures, use, shapes, and preservations.

ALthough Swine are accounted troublesome, noysome, unruly, and greatly ravenous, as indeed their natures are not much differing from such qualities; yet the utility and profit of them, will easily wipe off those offences; for

for to speak truly of the Swine, he is the Husbandmans best Scavenger, and the Huswives most wholsome sink; for his food and living is by that which will else rot in the yard, make it beastly, and breed no good manure, or being cast down the ordinary sink in the house breeds noysome smells, corruption, and infection; for from the Husbandman he taketh pulse, chaff, barn dust, mans ordure, garbage, and the weeds of his yard: and from the huswife her draff, swillings, whey, washing of tubs, and such like, with which he will live and keep a good state of body, very sufficiently; and though he is accounted good in no place but the dish only, yet there he is so lovely and so wholsome, that all other faults may be born with; he is by nature greedy, given much to root up grounds and tear down fences, he is very lecherous and in that act tedious and brutish: he is subject to much anger, and the fight of the Boars are exceeding mortal: they can by no means indure storms, winds, or foul weather, they are excellent observers of their own homes: and exceeding great lovers one of another: so that they will dye upon any beast that offendeth their fellows.

Of the choice
and shape of
Swine.

Now touching the choice of Swine, you shall understand that no Country in England breedeth naturally better Swine one than another: but if any have preheminance, then I must prefer *Leicestershire*, and some parts of *Northamptonshire*, and clay countries bordering on *Leicestershire*; and the reason I take to be, their great multiplicity of grain, especially beans and pulse. For the Mast countreys, though they are good feeders, they are no large breeders, whence it comes that your wild swine is ever your least swine, but your sweetest Bacon. But if the Race and keeping be alike, the proportion and goodness will be alike; therefore in the choice of your Swine, chiefly the Boars and Sows which you breed of, let them be long and large of body, deep sided, and deep bellied, thick thighs, and short legs, for though the long-legged swine appear a goodly beast, yet he but couzeneth the eye and is not so profitable to the Butcher, high claws, thick neck, a short and strong groin, and a good thick chine well set with strong bristles: the colour is best which is all of one peece, as all white, or all fanded; the pide are the worst and most apt to take meazles; the black is tolerable, but our Kingdome through the coldness breedeth them seldome.

The

The use and profit of Swine is only (as the Husbandman saith) The use and profit of Swine. for the rooſe, which is bacon; for the ſpit, which is pork, ſowſe, and pudding; and for breed, which is their pigs only. To have too many Sowes in a yard is not good, for their increaſe and bringing forth is ſo great, that they will for want of food eat one another. A Sow will bring forth Pigs three times a year, namely, at the end of every ten weeks, and the number is great which they will bring forth: for I have known one Sow have twenty pigs at one Litter; twelve, fourteen, and ſixteen are very common; yet a Sow can bring up no more pigs than ſhe hath Teats, therefore look how many ſhe hath, and ſo many pigs preſerve of the beſt, the reſt caſt away, or put to other Sowes which want, yet give ſuck. A Sow will bring pigs from one year old till ſhe be ſeven years old. The pigs which you rear, after you have choſen the beſt for Boars or Sowes to breed on, geld the reſt both male and females: the males will make goodly hogs, which are excellent Bacon or Pork; and the females, which are called Splayd-guelts, will do the like, and breed a great deal more greaſe in their bodies; whence it comes, that the Husbandman eſteems one ſplay'd-guelt before two hogs. Young Shots, which are Swine of three quarters, or but one year old, are the daintieſt pork.

Now for the preſervation of Swine, it is contained in their government and food and is all that belongeth to that office of the Swine-herd. The orderlieſt feeding of Swine is, (when you keep them but in good ſtate of body, and not ſeek to fat them) in the morning early when you untie them, to give them draſt, pulſe, or other garbage, with ſwilling in their troughs, and when they have eaten it, to drive them to the field, where they may graze and root for their food: and of Grounds the ſoft mariſh and mooriſh grounds are the beſt, where they may get the roots of Sedge, Reeds, Ruſhes, Knot-graſs, and ſuch like, which is whoſom for Swine, or the fallow or tythe-field, where they may root at pleaſure, and by killing the weeds bring profit to the Earth, and at the fall of the leaf it is good to drive them to hedges, where they may get Haws, Hips, Sloes, Crabs, or ſuch fruit, which is alſo very whoſom; and the poor ſort will gather their fruits, and keep them ſafe to feed their Swine with all the Winter. When evening cometh, you ſhall drive your Swine home, and

then filling their troughs with draff and swillings, let them fill their bellies, and then tie them up, so shall you keep them from doing other hurts and injuries. If once in a fortnight you mixe with your swillings some Radle or red Oaker, it will preserve them wonderfully from meazles, and all inward infections: and thus much for the general discourse of Swine; now I will proceed to their particular infirmities, and other busineses.

CHAP. II.

Of the Fever, or any hidden sickness in Swine.

The Cure.

THere is no Beast maketh his sickness so apparent as the Swine; for when he findeth any grief or distemperature in his body, he presently droopeth, forsakes his meat, and will not eat till he find himself in a perfect recovery: therefore when you shall so find him to forsake his meat, you shall first let him blood under his tail, and under his ears; and if they bleed not freshly enough, you shall beat them with a small stick, and that will bring forth the blood; then wrap about the wounds the bark of a young O-sier, and then keep him warm, and give him to drink warm swillings, well mixt with Barly-meal, and red Oaker.

CHAP. III.

Of the Murren, Pestilence, or Cather in Swine.

The Cure.

THese diseases being all of one nature, are very much incident in Swine, and spring from many grounds, as from corruption in blood, ingendred by the eating of rotten fruit, or too much Butchers garbage, and many times by eating too rank grass, wherein is much *Hemlock*: their particular signs are moist eyes, and their heads born on each side; but their general knowledg is their fasting and mortality. The Cure is to give them in warm Wash *Hens-dung*, and boyl'd *Liverwort*, with a little *Red Oaker*.

CHAP. IV.

Of the Gall in Swine.

The Cure.

Swine will have an overflowing of the Gall, because Cholera is much powerful in them, which you shall know by a swelling which will rise under their jaws; and the cure is, to stamp *Gall-wort* or *Saffron*, and mix it with honey and water, and then strain-

straining it, give it the Swine to drink by a Pint at a time.

CHAP. V.

Of the Meazles in Swine.

THis disease of all other is most common in Swine, and with ease helped, as thus: you shall take the oldest Urine you can get, and mix it with red Oaker till it be thick, and about the quantity of an Ale-quart, then mix it with a Gallon of warm sweet Whey, and give it the Swine to drink after he hath been kept all night fasting.

CHAP. VI.

Of Imposthumes in any part of a Swine.

Swine will have Imposthumes in any part of their bodies, as under their throats, their ears, bellies, and oft upon their sides. The Cure is, if they be soft, to lance them, and let out the matter, and then heal them with Tar and Butter; but if they be not soft, then let the Swine blood under the tongue, and rub all his mouth, chaps, and groin, with wheat-meal and salt, and the Imposthume will go away.

CHAP. VII.

Of Vomiting in Swine.

If your Swine do vomit and cast up his meat, you shall give him spelted Beans to eat, and they will strengthen his stomach.

CHAP. VIII.

Of leanness, mislike, scurf, and manginess in Swine.

These diseases proceed from corruption of blood, ingendred by lying wet in their Sties, having filthy rotten litter, or much scarcity of meat. The Cure is, first to let the Swine blood under the tail, then to take a Wool-card, and to comb off all the scurf and filth from the Swines back, even till his skin bleed: Then take Tarre, Hogs-grease and Brimstone, and mixing them well together, anoint the Swine therewith, then let the Stye be mended, his Litter be sweet, and give him good warm food, and the Swine will be fat and sound very suddenly.

The Cure.

CHAP. IX.

Of the Sleeping Evil in Swine.

The Cure.

Swine are much subject to this disease in the Summer-time, and you shall know it by their continual sleeping and neglecting to eat their meat. The cure is, to house them up, and keep them fasting twenty four hours, then in the morning when hunger pincheth them, to give them to drink water, in which is stamp'd good store of *Stone-crop*, which as soon as they have drunk they will vomit and cast, and that is a present remedy.

CHAP. X.

Of pain in the Milt.

The Cure.

Swine are oft troubled with pain in their Milts, or Spleens, which proceedeth from the eating of Mast, when they are first put thereunto, through their over-greedy eating thereof, and is known by a reeling, going of one side. The cure is, to give them the juice of Wormwood in a little honied water, to drink, and it will assuage the pain.

CHAP. XI.

Of the Unnaturalness of Sows.

Many Sows do prove so unnatural, that they will devour their pigs when they have farrow'd them, which springeth from an unnatural greediness in them; which to help, you must watch her when she farroweth, and take away the pigs as they fall, then take the wreckling, or worst pig, and anoint it all over with the juice of *Stone-crop*, and so give it the Sow again; and if she devour it, it will make her cast and vomit so extreemly, that the pain of her Surfeit will make her loath to do the like again. But of all Cures, the best for such an unnatural Beast, is to feed her well, and then kill her.

CHAP. XII.

Of the Laxe or Flux in Hogs.

For the Laxe or Flux in Swine, you shall give them Verjuice and milk mixt together to drink, and then feed them with food, as spelted Beans, Acorns, or Acorn-hus's. This is also excellent and approved for young Pigs and Shots, when they have any scouring.

CHAP.

CHAP. XIII.

Of the lugging of Swine with Dogs.

IF your Swine be extreacmly lugged and bitten with dogs, to prevent the rankling, and imposthumation of the Sore, you shall anoint it with vinegar, sope, and tallow mixt together, and it will cure the same.

CHAP. XIV.

Of the Pox in Swine.

THE Pox is a filthy and infectious disease in Swine, proceeding from corrupt blood, ingendered by poverty, wet lying, lowliness, and such like, and the Swine can never prosper which hath them. The cure is, to give them first to drink two spoonfuls of *London-Treacle*, in a pint of *bonied water*, which will expell the infection outwardly, then to anoint the sores with *Brimstone* and *Boars-grease* mixt together, and so separate the sick from the sound. The Cure.

CHAP. XV.

Of killing Maggots in the Ears or other parts of Swine.

IF Maggots shall breed in the Ears of your Swine, which have been lugged with dogs for want of good looking unto, as often it happeneth; you shall take either the sweetest Wort you can get, or else honey, and anoint the Sores therewith, and the Maggots presently will fall off and dye.

CHAP. XVI.

Of feeding Swine exceeding fat, either for Bacon or for Lard.

DIVERS men according to the nature of divers Countries, have divers wayes in feeding of their Swine, as those which live near unto Woods and places where store of Mast is, turn their Swine into Mast for six or eight weeks, and then having got flesh and fatness on their backs do bring them home, and put them up in Sties, and then feed them for ten dayes or a fortnight after with old dry pease, given them oft in the day, a little at once, with Water as much as they will drink: for this will harden the flesh and fat, so that it will not consume when it comes to boyling; this manner of feeding is good, and not to be disliked. The feeding of Swine in Wood-Countries.

Now

The feeding
of Swine in
Champion
Countries,

Now the feeding of Swine in Champion Countries, which are far from Woods, is in this manner. First, you shall stie up those Swine which you intend to feed, and let them not come out of the same untill they be fed, but have their food and water brought unto them. Now the first two dayes you shall give them nothing, the third day you shall early in the morning give them a pretty quantity of dry pease or beans; at noon you shall give them as much more, at four of the clock as much more, and when you go to bed as much more, but all that day no water. The next day you shall feed them again at the same hours, and set water by them, that they may drink at their own pleasure, and twice or thrice a week, as your provision will serve you, it is good to fill their bellies with sweet Whey, Butter-milk, or warm Wash, but by no means scant the proportion of their Pease; and by thus doing you shall feed a Swine fat enough for the slaughter in four or five weeks.

Of feeding at
the Reek.

There be other Husbandmen in Champion Countries, as in *Leicestershire*, and such like, that put their Swine to Pease Reeks, or Stacks set in the field near unto water-furrows or rundles, so that they may let the water into the Stack-yard, and then morning and evening cut a cutting of the Stack or Reek, and spread the reaps among the Swine. This manner of feeding is best for small Porkets, and will fat them very reasonable in three weeks or a month. If you feed Sheep amongst your Porks, it is very good, and daily by many practised; for by that means you shall not lose any of your grain; for what your Sheep cannot gather up, your Porkets will.

Of feeding of
Swine in or a-
bout great Ci-
ties.

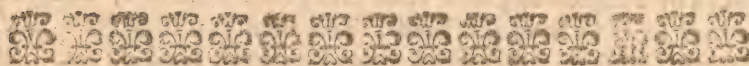
Now for such as live in or near about great Cities or Towns, as *London*, *York*, or such like, and have neither great store of Mast, nor great store of grain; yet they have a manner of feeding as good, and somewhat more speedier than any of the other, only the Bacon is not so sweet or toothsom, and thus it is. They stie up their fatlings, as is before said, and then take Chandlers grains, which is the dregs and offall of rendred Tallow, as hard skins, keels, and fleshy lumps, which will not melt together with other course skins of the Tallow, Suet, or Kitchen-fee, and mixing it in warm Mash, give it the Swine to eat three or four times in the day, and it will suddenly puff him up with fatness, then bestow
of

of every Swine a bushel of dry Pease to harden his flesh, and you may kill them at your pleasure. The only danger of this food is, it will at first sometimes make Swine scour, especially young Pigs if they eat it: but as soon as you perceive such a fault, give unto your elder Swine milk and Verjuice, and to your sucking Pigs Verjuice only.

Now lastly, the best feeding of a Swine for Lard, or a Boar for Brawn, is to feed them the first week with Barly sodden till it break, and sod in such quantity that it may ever be given sweet; then after to feed them with raw malt from the floor, before it be dried, till they be fat enough: and then for a week after, to give them dry Pease or Beans to harden their flesh. Let their drink be the washing of Hogheads, and Ale-barrels, of sweet Whey, and let them have store thereof. This manner of feeding breeds the whitest, fattest, and best flesh that may be, as hath been approved by the best Husbands.

Of feeding of
Hogs for Lard,
or Boars for
Brawn.

The end of the Swine of all Sorts.



Of Conies.

CHAP. I.

Of the tame ri. b Coney, his nature, choice, profit, and Preservation.

ALL sorts of Conies may as well be kept tame as wild, and do above all other beasts delight in imprisonment and so-
litariness, which proceedeth from the strength of melancholly in their nature, being creatures so much participating of the earth, that their delight is to live in holes, rocks, and other dark caverns. They are violently hot in the act of generation, and perform it with such vigor and excess, that they swoon and lye in trances a
good

The nature of
the Coney.

good space after the deed is done. The males are given to much cruelty, and would kill the young Rabbits if he could come to them : whence it proceedeth, that the females after they have kindled, hide their young ones, and close up the holes , so that the Buck-cony may not find them. The female or Doe-conies are wonderful in their increase , and bring forth young ones every moneth: therefore when you keep them tame in boxes, you must observe to watch them, and as soon as they have kindled, to put them to the Buck, or otherwise they will mourn, and hardly bring up their young ones.

Of Boxes for
tame Conies.

The Boxes in which you shall keep your tame Conies, would be made of thin Wainscot boards, some two foot square, and one foot high ; and that square must be divided into two rooms, a greater room with open windows of wire , through which the Coney may feed ; and a lesser room without light, in which the Coney may lodge and kindle, and before them both a trough in which you may put meat, and other necessaries for the coney, and thus you may make box upon box in divers stories, keeping your Bucks by themselves , and your Does by themselves, except it be such Does as have not bred , and then you may let a Buck lodge with them ; also when your Doe hath kindled one nest, and then kindleth another, you shall take the first from her and put them together in a several Box amongst Rabbits of their own age, provided that the box be not pestered, but that they have ease and liberty.

Of the choice
of rich Conies.

Now for the choice of these tame rich Conies you shall not as in other cattel look to their shape, but to their richness ; only elect your Bucks by the largest and goodliest Coneys you can get: and for the richness of the skin, that is accounted the richest, which hath the equallest mixture of black and white hair together, yet the black rather shadowing the white, than white any thing at all over-maistering the black, for a black skin with a few silver hairs is much richer than a white skin with a few black hairs : but as I said before, to have them equally or indifferently mixt is the best of all other. The Fur would be thick, deep, smooth, and shining ; and a black coat without silver hairs, though it be not reckoned a rich coat, yet it is to be preferred before a white, a pyed, a yellow, a dun, or gray.

Now

Now for the profit of these rich Conies, (for unless they did far away and many degrees exceed the profit of all other conies they were not worth the charge which must be bestowed upon them) it is this; First, every one of the rich conies which are killed in season as from *Martilmas* untill after *Candlemas*, is worth any five other Conies, for they are of body much fatter and larger, and when another skin is worth two pence or three pence at the most, they are worth two shillings, or two shillings and sixpence. Again, they encrease oftner, and bring forth more Rabbits at one kindling then any wild Cony doth: they are ever ready at hand for the dish, Winter and Summer, without charge of Nets, Ferrets, or other Engines, and give their bodies gratis, for their skins will ever pay their Masters charge with a most large interest.

Now for the feeding and preservation of these rich Conies, it is nothing so costly or troublesome as many have imagined, and as some ignorant in the skill of keeping them, have made the World think: for the best food you can feed a Cony with, is the sweetest, shortest, softest, and best hay you can get, of which one load will serve two hundred couples a year, and out of the stock of two hundred, you may spend in your house two hundred and sell in the market two hundred more, yet maintain the stock good, to answer every ordinary casualty. This hay in little cloven sticks might with ease reach it and pull it out of the same yet so as they may not scatter nor waste any. In the Troughs under their boxes, you shall put sweet Oats and their water, and this should be their ordinary and constant food wherewith you shall feed your Conies, for all other should be used but Physically, as for the preservation of their health: as thus you shall do twice or thrice in a fortnight for the cooling of their bodies give them Greens, as Mallows, Claver-grass, Sower-docks, blades of Corn, Cabbage or Colwort leaves, and such like, all which cooleth and nourisheth exceednigly: some use to give them sometimes sweet grains, but that must be used seldom, for nothing sooner rotteth a Cony.

Of the feeding
and preservation
of Conies.

You must also have great care that when you cut any grass for them that are woods, that there grow no young Hemlock amongst it, for though they will eat it with great greediness, yet it

is a present poyson, and kills suddainly, you must also have an especial care every day to make their boxes sweet and clean, for the strong savour of their ordure and piss is so violent, that it will both annoy themselves, and those which shall be frequent amongst them.

Of the Rot in
Conies.

Now for the infirmities which are incident unto them, they are but two: The first is rottenness, which cometh by giving them too much green meat, or gathering their greens and giving it them with the dew on: therefore let them have it but seldome, and then the dryness of the Hay will ever drink up the moysture, knit them and keep them sound without danger.

Of madness
in Conies.

The next is a certain rage of madness, ingendred by corrupt bloud, springing from the rankness of their keeping; and you shall know it by their wallowing and tumbling with their heels upward, and leaping in their boxes. The Cure is, to give them *Harebistle* to eat; and it will heal them. And thus much of the tame rich Coney, and his properties:

The end of the Four-footed Beasts.



The Second Book.

Of Poultry.

CHAP. I.

Containing the ordering, sitting, cramming, and curing of all infirmities of Poultry, as Cocks, Hens, Chickens, Capons, Geese, Turkeys, Pheasants, Partridges, Quails, House-doves, and all sorts of Fowl whatsoever. And first of the Dunghill Cock, Hen, Chicken, and Capon.

Some small thing hath been written of this nature before, but so drawn from the Opinions of old Writers, as *Italians*, *French*, *Dutch*, and such like, that it hath no coherence or congruity with the practice and experience of English Customs, both

both their Rules and Climes being so different from ours, that except we were to live in their Countries, the Rules which are printed are useles, and to no purpose. To let pass then the opinion of strangers, and come to our own home-bred knowledg which is so mixed with all profitable experiments, that it needeth not the help of other Nations so much, as men would make us believe.

You shall understand that the Dunghill Cock (for the fighting Cock deserveth a much larger and particular discourse) is a fowl of all others birds the most manliest, stately, and majestical, very tame and familiar with the man, and naturally inclined to live and prosper in habitable Houses: he is hot and strong in the act of generation, and will serve ten Hens sufficiently, and some twelve and thirteen: he delighteth in open and liberal plains, where he may lead forth his Hens into green pastures and under hedges, where they may warm and bath themselves in the Sun; for to be pent up in walled places, or in paved Courts, is most unnatural unto them, neither will they prosper therein.

Of the Choice
and shape of
the Cock.

Now of the choyce and shape of the Dunghill Cock, he would be of large and well sized body, long from the head to the Rump, and thick in the garth; his neck would be long, loose, and curiously bending it and his body together, being straight and high up erected, as the Faulcon and other birds of prey are; his comb, wattles and throat would be large, of great compass, ragged, and very Scarlet red, his eyes round and great, the colour answering the colour of his plume or male, as gray with gray, red with red, or yellow with yellow, his bill will be croked, sharp, and strongly set on to his head, the colour being suitable with the colour of feathers on his head, his main or neck-feathers would be very long, bright, and shining, covering from his head to his shoulders, his legs straight and of a strong beam, with large long spurs sharp and a little bending, and the colour black, yellow or brownish, his claws short, strong, and well wrinkled, his tayl long, and covering his body very closely, and for the general colour of the Dunghill Cock it would be red, for that is medicinal, and oft used in cullisses and restoratives. This Cock should be valiant within his own walk, and if he be a little Knavish, he is so much the better; he would be oft crowing and busie in scratching the earth to find out Worms and other food for his Hens.

Of the Hen
her choyce
and shape.

Now for the Hen, if she be a good one, she should not differ much from the nature of the Cock, but be valiant, vigilant and laborious both for her self and her Chickens. In shape the biggest and largest are the best, every proportion answering those before described of the Cock, only instead of her comb she should have upon her crown a high thick tuft of feathers: to have many and strong claws is good, but to want hinder claws is better, for they oft break the eggs, and such Hens sometimes prove unnatural, it is not good to choose a crowing Hen, for they are neither good breeders nor good layers. If you choose Hens to sit, choose the elder, for they be constant, and will sit out their times; and if you will choose Hens to lay, choose the youngest; for they are lusty and prone to the act of ingendring; but for neither purpose choose a fat Hen, for if you set her, she will forsake her nest; and if you keep her to lay, she will lay her eggs without shells. Besides, a fat Hen will waxe sloathful, and neither delight in the one, nor in the other Act of Nature; such Hens then are fittest for the dish then the Hen-house.

Of Setting
Hens.

The best time to set Hens to have the best, largest, and most kindly Chickens, is in *February*, in the increase of the Moon, so that she may hatch or disclose her Chickens in the increase of the next new Moon, being in *March*; for one brood of *March* Chickens is worth three broods of any other: you may set Hens from *March* till *October*, and have good Chickens, but not after by any means, for the Winter is a great enemy to their breeding. A Hen doth sit twenty one dayes just, and then hatcheth; but Pea-hens, Turkeys, Geese, Ducks, and other Water-fowl sit thirty: so that if you set your Hen as you may do upon any of their Eggs, you must set her upon them nine dayes before you set her upon her own. A Hen will cover nineteen Eggs well, and that is the most in true rule, she should cover, but upon what number soever you set her, let it be odd, for the Eggs will lye round, close, and in even proportion together; it is good when you lay your eggs first under your Hens, to mark the upper side of them, and then to watch the Hen, to see if she busie her self to turn them from the one side to the other, which if you find she doth not, then when she riseth from her eggs to feed or bath her self, you must supply that office, and turn every egg it self, and esteem your hen
of.

off so much the less reckoning for the use of breeding : be sure that the Eggs which you lay under her, be new and sound, which you may know by their heaviness, fulness, and cleanness, if you hold them up betwixt the Sun and your eye-light ; you must by no means at any time raise your Hen from her nest, for that will make her utterly forsake it.

Now for helping a Hen to hatch her eggs, or doing that which should be her office, it is unnecessary, and shall be much better to be forborn then any way used ; or to make doubt of bringing forth, or to think the Hen sitteth too long, as many curious House-wives do, if you be sure you set her upon sound Eggs, is as frivolous : but if you set her upon unsound Eggs, then blame your self both of the loss and injury done unto the Hen in her loss of labour.

Choyce of
Eggs.

A Hen will be a good sitter from the second year of her laying to the fifth, but hardly any longer; you shall observe ever when your Hen riseth from her nest, to have meat and water ready for her, lest straying too far to seek her food, she let her eggs cool too much, which is very hurtful. In her absence you shall stir up the straw of her nest, and make it soft and handsome, and lay the eggs in order as she left them: do not in the election of your Eggs choose those which are monstrous great, for they many time have two yells; and though some write, That such Eggs will bring out two Chickens, yet they are deceived; for if they bring forth two, they are commonly most abortive & monstrous: to perfume the nest with brimstone is good, but with Rosemary much better. To set Hens in the Winter-time in Stows or Ovens is of no use with us in *England*, and though they may by that means bring forth, yet will the Chickens be never good nor profitable, but like the planting of Lemons and Pomegranate-trees, the fruits will come a great deal short of the charges. When your Hen at any time is absent from her nest, you must have great care to see that the Cock come not to sit upon the Eggs, (as he will offer to do) for he will indanger to break them, and make her love her nest worse.

As soon as your Chickens be hatcht, if any be weaker then the other, you shall rap them in Wool, and let them have the ayr of the fire, and it will strengthen them: to perfume them with a little.

the Rosemary is very wholesome also; and thus you may in a sieve keep the first hatcht Chickens till the rest be disclosed, (for Chickens would have no meat for two dayes) and some shells being harder than other, they will take so much distance of time in opening; yet unless the Chickens be weak, or the Hen rude, it is not amiss to let them alone under her, for she will nourish them most kindly: after two dayes is past, the first meat you give them should be very small Oatmeal, some dry, and some steeped in milk, or else fine wheat bread crums; and after they have got strength, then Curds, Cheese-parings, white-bread crust soak'd in Milk or Drink, Barly meal, or Wheat bread scalded, or any such like soft meat that is small, and will easily be divided. It is good to keep Chickens one fortnight in the house, and after to suffer them to go abroad with the Hen to worm, for that is very wholesome to chop green Chives amongst your Chickens meat, will preserve them from the Rye, and other diseases in the head; neither must you at any time let your chickens want water, for if they be forced to drink in puddle, it will breed the Pip: also to feed upon Tares, Darnel, or Cockel, is very dangerous for young chickens.

Of feeding
and cramming
Chickens.

You may be these foods aforesaid, feed chickens very fat under their dams: but if you will have fat crammed chickens, you shall coop them up when the Dam forsaketh them, and the best crams for them is wheat-meal and milk, made into dough, and then the crams steeped in milk, and so thrust down their throats; but in any case let the crams be small, and well wet for choaking; fourteen dayes will feed a Chicken sufficiently: And thus much briefly for your breed.

Of preserving
Eggs.

Now because eggs of themselves are a singular profit, you shall understand, that the best way to preserve or keep them long, is, as some think, to lay them in good straw, and cover them close, but that is too cold, and besides will make them rusty: others will lay them in bran, but that is too hot, and will make them putrifie; and others will lay them in salt, but that makes them waste and diminish: the best way then to keep them most sweet, most sound, and most full, is only to keep them in a heap of old Malt, close and well covered all over.

Of gathering
Eggs.

You shall gather your eggs up once a day, and leave in the nest but the nest-egg, and no more; and that would ever be in the after-

afternoon, when you have seen every Hen come from her nest severally: some Hens will by their cackling tell you when they have laid, but some will lay mute; therefore you must let your own eye be your instructor.

Now touching the Capon, which is the guelt Cock-chicken, Of the Capon you shall understand, that the best time to carve or guelt, is as soon as the Dam hath left them, if the stones be come down, or else as soon as they begin to crow: for the art of carving it self, it is both easie and common, and much sooner to be learned by seeing one carved, then by any demonstration in writing. when to carve him.

These Capons are of two uses: The one is to lead Chickens, A Capon to lead Chickens- Ducklings, young Turkies, Pea-hens, Pheasants and Partridges, which he will do altogether, both naturally and kindly, and through largeness of his body, will brood or cover easily thirty or five and thirty; he will lead them forth so safely, and defend them against Kites or Buzzards, more and better then the Hens: therefore the way to make him to take unto them is, with a fine small briar or else sharp nettles at night, to beat and sting all his breast and neither parts, and then in the dark to seat the Chickens under him, whose warmth taketh away his smart; he will fall much in love with them, and whensoever he proveth unkind, you must sting, or beat him again, and this will make him never forsake them.

The other use of Capons is, to feed for the dish, as either at Of feeding or the Barn door, with craps of corn, and the chayings of pulse, or cramming. else in pens in the house, by cramming them, which is the most Capons. dainty: the best way then to cram a Capon, (setting all strange inventions apart) is to take Barley-meal reasonably sifted, and mixed with new milk, make it into a good stiff dough; then make it into long crams, biggest in the midst, and small at both ends, and then wetting them in luke-warm milk, give the Capon a full gorge thereof three times a day, morning, noon and night, and he will in a fortnight or three weeks, be as fat as any man need to eat.

As for mixing their crams with sweet Wort, Hogs greafe, or Sallet oyl, they are by experience found to breed loath in the Birds, and not to feed at all: only keep this observation, not to give your Capon new meat untill the first be put over. And if you

you find your Capon something hard of digestion, then you shall sift your meal finer, for the finer your meal is, the sooner it will pass through their bodies. And thus much for the Capon. Now for their infirmities, they follow in order.

CHAP. II.

Of the Pip in the Poultry.

The Cure.

THe Pip is a white thin scale, growing on the tip of the tongue, and will make Poultry that they cannot feed: it is easie to be discerned, and proceedeth generally from drinking puddle water, from want of water, or from eating filthy meat. The Cure is to pull off the scale with your nayl, and then rub the tongue with salt.

CHAP. III.

Of the Roup in Poultry.

The Cure.

THe Roup is a filthy byle or swelling on the Rump of Poultry, and will corrupt the whole body. It is ordinarily known by the staring and turning backward of the feathers: The Cure is, to pull away the feathers, and open the sore, to thrust out the core, and then wash the place with salt and water, or with brine, and it helpeth.

CHAP. IV.

Of the Flux in Poultry.

The Cure.

THe Flux in Poultry cometh with eating too much moyst meat. The Cure is, to give them pease bran scalded, and it will stay them.

CHAP. V.

Of stopping in the Belly.

Stopping in the Bellies of Poultry, is contrary to the Flux, so that they cannot mite: therefore you shall anoint their Vents, and then give them either small bits of bread, or Corn steep in mans Urine.

CHAP. VI.

Of Lice in Poultry

IF your Poultry be much troubled with Lice, as it is a common infirmity

infirmity, proceeding from corrupt food, or want of bathing in sand, ashes, or such like : you shall take Pepper small beaten, and mixing it with warm water, wash your Poultry therein, and it will kill all sorts of vermine.

CHAP. VII.

Of stinging with venomous Worms.

IF your Poultry be stung with any venomous thing, as you may perceive by their lowring and swelling, you shall then anoint them with Rew and Butter mixt together, and it helpeth.

CHAP. VIII.

Of sore eyes in Poultry.

IF your Poultry have sore eyes, you shall take a leaf or two of Ground-Ivy, and chawing it well in your mouth, suck out the juice and spit into the sore eye, and it will most assuredly heal it, as it hath been often tried.

CHAP. IX.

Of Hens that crow.

IF your Hens crow, which is an ill sign and unnatural, you shall pull their wings, and give her to eat either Barley scorched, or small Wheat, and keep her close from other Poultry.

CHAP. X.

Of Hens that eat their Eggs.

IF your Hen will eat her Eggs, you shall only lay for her Nest-egg a piece of Chalk cut like an Egg, at which by pecking and losing her labour she will refrain the evil.

CHAP. XI.

Of keeping a Hen from sitting.

IF you would not have your Hen sit, you shall bath her oft in cold water, and thrust a small feather through her nostrils.

CHAP. XII.

Of making Hens lay soon and oft.

IF you feed your Hens often with toasts taken out of Ale, with Barly boyl'd, or spelted fitches, they will lay soon, oft, and all the winter.

CHAP. XIII.

Of making Hens lean.

BEcause fat Hens commonly either lay their Eggs without Shells, or at the best hand lay very small Eggs; to keep them lean, and in good plight for laying, you shall mix both their meat and water with the powder of Tile-sheards, Chalk, or else Tares, twice or thrice a week.

CHAP. XIV.

Of the Crow-trodden.

IF your Hen be trodden with a Carrion-Crow, or Rook, as oft they are, it is mortal and incurable, and you shall know it by the staring up of her feathers, and hanging of her wings, there is no way with her then but presently to kill her.

CHAP. XV.

Of the Hen-house, and situation.

NOW forasmuch as no Poultry can be kept either in health or safety abroad, but must of force be housed, you shall understand, that your Hen-house would be large and spacious, with somewhat a high roof, the walls strong, both to keep out thieves and vermine, the windows upon the Sun-rising, strongly lathed, and close shuts inward, round about the inside of the walls. Upon the ground would be built large Pens of three foot high for Geese, Ducks, and great fowl to sit in. Near to the eavings of the house would be long Pearches, reaching from one side of the house to the other, on which should sit your Cocks, Hens, Capon, and Turkeys, each on several Pearches, as they are disposed: at another side of the house, in that part which is darkest over the ground-pens, would be fixed Hampers full of straw for Nests, in which your Hens shall lay their eggs, but when they sit to bring forth chickens, then let them sit on the ground, for otherwise it is dangerous: let there be pins stricken into the wall, so that your Poultry may climb to their pearches with ease: let the floor by no means be paved, but of earth smooth and easie; let the smaller fowl have a hole at one end of the house, made to come in and out at when they please, or else they will seek roost in other places; and for the greater Fowl the door may be opened evening and morning. This house should be placed
either

either near some Kitchen, Brew-house, or else some Kiln, where it may have air of the fire, and be perfumed with smoak, which to Pullen is delightful and wholsom. And thus much of the Cock, Hen, Capon, and Chicken.

CHAP. XVI.

Of Geese, their nature, choice, and how to breed them.

Geeſe are a fowl of great profit many wayes, as firſt for food, next for their feathers, and laſtly for their greaſe. They are held of Husbandmen to be fowl of two lives, becauſe they live both on land and water; and therefore all men muſt underſtand that except he have either Ponds or Stream, he can never keep Geefe well. They are ſo watchful and careful over themſelves, that they will prevent moſt dangers. Graſs alſo they muſt neceſſarily have, and the worſt, and that which is the moſt uſeleſs is the beſt, as that which is mooriſh, rotten, and unſavory for cat-tel. To good graſs they are a great enemy, for their dung and treading will putriſie it, and make it then barren.

Now for the choice of Geefe, the largeſt is the beſt, and the colour would be white or gray, all of one pair, for pide are not ſo profitable, and black are worſe. Your Gander would be kna-viſh and hardy, for he will defend the Goſlings the better.

Now for the laying of Eggs, a Goofe beginneth to lay in the Spring, and ſhe that layeth earlieſt is ever the beſt Goofe, for ſhe may have a ſecond hatch. Geefe will lay twelve, and ſome ſix-teen Eggs, ſome will lay more, but it is ſeldom, and they cannot be all well covered. You ſhall know when your Goofe will lay, by her carrying ſtraw up and down in her mouth, and ſcattering it abroad: and you ſhall know when ſhe will ſit, by her continuing on the neſt till after ſhe hath laid. You muſt ſet a Goofe upon her own Eggs, for ſhe will hardly or unkindly ſit on another Goofe Eggs, as ſome imagine, but it is not ever certain: you ſhall in her ſtraw when you ſet her mix Nettle roots, for it is good for the Goſlings: thirty days is the full time that a Goofe ſitteth, but if the weather be fair and warm, ſhee will hatch three or four dayes ſooner: ever when the Goofe riſeth from the Neſt, you

The choice of Geefe.

Of laying eggs, and ſitting.

The ordering
of Goslings.

shall give her meat, as Skeg-Oats, and Bran scalded, and give her leave to bath in the water. After she hath hatcht her Goslings, you shall keep them in the house ten or twelve dayes, and feed them with Curds, scalded Chippings, or Barly-meal in milk knodden and broken; also ground Malt is exceeding good, or any Bran that is scalded in water, milk, or tappings of drink. After they have got a little strength, you may let them go abroad with a Keeper five or six hours in a day, and let the dam at her leisure intice them in the water; then bring them in, and put them up, and thus order them, till they be able to defend themselves from vermine. After a Gosling is a month or six weeks old, you may put it up to feed for a Green-Goose, and it will be perfectly fed in another month following: and to feed them, there is no meat better than Skeg-Oats boyl'd, and given plenty thereof thrice a day, Morning, Noon, and Night, with good store of milk, or milk and water mixt together to drink.

Of green-geese
and their fat-
ting.

Of the Gander.

Now you shall understand, one Gander will serve well five Geese, and to have not above forty Geese in a flock is best; for to have more is both hurtful and troublesome.

Fattning of el-
der Geese.

Now for the fattning of elder Geese, which are those which are five or six months old, you shall understand, that after they have been in the stubble-fields, and during the time of Harvest got into good flesh, you shall then choosse out such Geese as you would feed, and put them in severall pens which are close and dark, and there feed them thrice a day with good store of Oats, or spelted Beans, and give them to drink water and Barly-meal mixt together, which must evermore stand before them; this will in three weeks feed a Goose so fat as is needful.

Of gathering
Geese-feathers.

Now lastly, for the gathering of a Gooses feathers, you shall understand, that howsoever some Writers advise you for a needles profit to pull your Geese twice a year, *March* and *August*: yet certainly it is very naught and ill; for first, by disabling the flight of the Goose, you make her subject to the cruelty of the Fox, and other ravenous beasts; and by uncloathing her in Winter you strike that cold into her body which kills her very suddenly: therefore it is best to stay till moulting time, or till you kill her, and then you may imploy all her feathers at your pleasure, either for beds, Fletchers, or Scriveners.

For

For the disease and infirmities in Geese, the most and worst ^{Of the Gargil} they are subject unto, is the *Gargil*, which is a mortal or dead- ^{in Geese.} ly stopping of the head. And the ordinary and certain cure is, to take three or four cloves of Garlick, and beating them in a mortar with sweet butter, make little long balls thereof, and give two ^{The Cure.} or three of them to the Goose fasting, and then shut her up for two hours after.

CHAP. XVII.

Of Turkies, their nature, use, increase, and breeding.

Turkies, howsoever by some Writers they are held devourers of Corn, strayers abroad, ever pulling for meat, and many such like feigned troubles, as if they were utterly unprofitable, yet it's certain, they are most delicate either in Patt, or from the Spit, and being fat, far exceeding any other house-fowl whatsoever: nay, they are kept with more ease and less cost, for they will take more pains for their food than any other bird, only they are enemies to a Garden, and from thence must ever be kept. They when they are young are very tender to bring up, both because they are of a straying nature themselves, and the Dams are so negligent, that whilst she hath one following her, she never respecteth the rest; therefore they must have a vigilant Keeper to attend them, till they can shift for themselves, and then they will flock together, and seldom be parted. Till you fat them, you need not care for food for them: They love to roost in trees, or other high places.

Now for your choice of such as you would breed on, your ^{Of the choice} Turkey-Cock would not be above two years old at most, be sure ^{of the Turkey} that he be loving to the Chickens; and for your Hen, she will lay ^{Cock.} till she be five year old and upward. Your Turkey-Cock would be a Bird large, stout, proud, and Majestical; for when he walketh dejected, he is never good Treader.

The Turkey-hen, if she be not prevented, will lay her Eggs in ^{Of the Turkey-} secret places, therefore you must watch her, and bring her to her ^{Hen her sitting.} Hen-house, and there compell her to lay. They begin to lay in March, and will sit in April; and eleven Eggs, or thirteen, is the most they shou'd cover. They hatch ever between five and twenty and thirty dayes. When they have hatcht their broods, be sure

to keep up the Chicks warm, for the least cold kills them, and feed them either with Curds or green fresh Cheese cut in small pieces. Let their drink be new milk, or milk and water : you must be caretul to feed them oft ; for the Turkey-Hen will not like the House-Hen call her chickens to feed them. When your Chicks have got strength, you shall feed them abroad in some close walled Grass-plot, where they cannot stray, or else ever be at charge of a Keeper. The dew is most hurtful unto them, therefore you must house them at night, and let them abroad after Sun-rise in the morning.

Of feeding
Turkies.

Now for the fattening of Turkies, sodden Barly is excellent, or sodden Oats for the first fortnight, and then for another fortnight cram them in all sorts as you cram your Capon, and they will be fat beyond measure. Now for their infirmities, when they are at liberty, they are so good Physicians for themselves, that they will never trouble their Owners ; but being coopt up, you must cure them as is before described for Pullen. Their Eggs are exceeding wholsom to eat, and restore nature decayed wonderfully.

CHAP. XVIII.

Of the Duck, and such Water-fowls.

THe tame Duck is an exceeding necessary fowl for the Husbandmans yard, for she asketh no charge in keeping, but liveth of corn lost, or other things of less profit. She is once in a year a very great layer of Eggs : and when she sitteth, she craves both attendance and feeding ; for being restrained from seeking her food, she must be helped with a little barly, or other overchaving of corn, such as else you would give unto Swine : as for her sitting, hatching, and feeding of her Ducklings, it is in all points to be observed in such manner as you did before with the Goose, only after they are abroad they will shift better for their food than Goslings will. For the fattening of Ducks or Ducklings, you may do it in three weeks, by giving them any kind of Pulse or Grain, and good store of water.

Of Wild-ducks
and their or-
dering.

If you will preserve Wild-Ducks, you must wall in a little piece of ground, in which is some little Pond or Spring, and cover the top of it all over with a strong net. The Pond must be set with many tufts of Oziers, and have many secret holes, and creeks,

creeks, for that will make them delight and feed though imprisoned. The Wild-duck when she layeth, will steal from the Drake and hide her nest; for he else will suck the Eggs. When she hath hatcht, she is most careful to nourish them, and needeth no attendance more than meat, which would be given fresh, twice a day, as scalded Bran, Oats or Fitches. The House-hen will hatch Wild-ducks Eggs, and the meat will be much better, yet every time they go into the water, they are in danger of the Kite, because the hen cannot guard them. In the same manner as you nourish Wild-ducks, so you may nourish Teils, Widgens, Shel-drakes or green Plovers.

CHAP. XIX.

Of Swans, and their feeding.

TO speak of the breeding of Swans is needless, because they can better order themselves in that business than any man can direct them, only where they build their nests, you shall suffer them to remain undisturbed, and it will be sufficient: but for the feeding them fat for the dish, you shall feed your Cygnets in all sorts as you feed your Geese, and they will be through fat in seven or eight weeks, either coopt in the house, or else walking abroad in some private court; but if you would have them fat in shorter space, then you shall feed them in some Pond, hedg'd or pal'd in for that purpose, having a little dry ground left, where they may sit and prune themselves, and you may place two Troughs, one full of Barly and water, the other full of old dried Malt, on which they may feed at their pleasure; and thus doing they will be fat in less than four weeks; for by this means a Swan keepeth himself neat and clean, who being a much defiled Bird, liveth in dry places so uncleanly, that they cannot prosper, unless his attender be diligent to dress and trim his walk every hour.

CHAP. XX.

Of Peacocks, and Peahens, their increase, and ordering.

PEACOCKS, howsoever our old writers are pleased to deceive themselves in their praises, are birds more to delight the eye
by

by looking on them, than for a particular profit; the best commodity arising from them, being the cleansing and keeping of the Yard from venomous things, as Toads, Newts, and such like, which is their daily food: whence it comes, that their flesh is very unwholsom, and used in great Banquets more from the rareness than the nourishment, for it is most certain, roast a Peacock or Peahen never so dry, then set it up, and look on it the next day, and it will be bloud-raw, as if it had not been roasted at all.

The Peahen loves to lay her Eggs abroad in bushes and hedges, where the Cock may not find them, for if he do, he will break them; therefore as soon as she begins to lay, separate her from the Cock, and house her till she have brought forth her young, and that the cronet of feathers begin to rise at their foreheads, and then turn them abroad, and the Cock will love them, but not before. A Peahen sits just thirty dayes, and in her sitting any Grain, with water, is food good enough. Before your Chickens go abroad, you shall feed them with fresh green Cheese, and Barly meal, with water; but after they go abroad the Dam will provide for them. The best time to set a Peahen is, at the beginning of the Moon, and if you set Hens-eggs amongst her eggs, she will nourish both equally: The Pea-chickens are very tender, and the least cold doth kill them, therefore you must have a care to keep them warm, and not to let them go abroad but when the Sun shineth. Now for the feeding of them, it is a labour you may well save, for if they go in a place where there is any corn stirring, they will have part, and being meat which is seldom or never eaten, it mattereth not so much for their fatning.

CHAP. XXI.

Of the tame Pidgeon, or rough-footed.

THe tame rough-footed Pidgeon differs not much from the wild Pidgeon, onely they are somewhat bigger, and more familiar, apt to be tame; they commonly bring not forth above one pair of Pidgeons at a time, and those which are the least of body, are ever the best Breeders, they must have their rooms and boxes made clean once a week, for they delight much in neat-

ness; and if the walls be outwardly whited or painted, they love it the better, for they delight much in fair building. They will bring forth their young ones once a moneth, if they be well fed, and after they be well pair'd, they will never be divided. The Cock is a very loving and natural bird both to his Hen and the young ones, and will sit the Eggs while the Hen feedeth, as the Hen sits while he feedeth: he will also feed the young with as much painfulness as the Dam doth, and is best pleased when he is brooding them. These kind of Pidgeons you shall feed with white Pease, Tares, and good store of clean water. In the room where they lodge you shall ever have a salt Cat for them to pick on, and that which is gathered from Salt-petre is the best; also they would have good store of dry Sand, Gravel, and Pibble, to bathe and cleanse themselves withall, and above all things great care taking, that no vermin, or other birds come into their boxes, especially Starlings, and such like, which are great Egg-suckers. And thus much of the tame Pidgeon.

CHAP. XIII.

Of nourishing and fasting Hearn, Puet, Gulls, and Bitterns.

Hearns are nourished for two causes: either for Princes sports to make trains for the chasing their Hawks, or else to furnish on the table at great Feasts: the manner of bringing them up with the last charge, is to take them out of their nests before they can fly, and put them into a large high Barn, where there is many high and cross beams for them to perch on: then to have on the floor divers square boards with rings in them and between every board which would be two yards square, to lace round shallow tubs full of water; then to the boards you shall tie great gobbers of Dogs flesh cut from the bones according to the number which you feed: and be sure to keep the house sweet, and shift the water oft, only the house must be made so, that it may rain in now and then, in which the Hearn will take much delight. But if you feed him for the dish, then you shall feed them with Livers, and the in-rails of Beasts, and such like, cut in great gobbers; and this manner of feeding will also feed either Gull, Puet, or Bittern: but the Bittern is ever best to be fed by the hand, because when you have fed him, you must tye his beak together, or he will cast up his meat again.

CHAP. XXIII.

Of feeding the Partridge, Pheasant, and Quail.

THese three are the most daintiest of all birds, and for the Pheasant or Partridge, you may feed them both in one room where you may have little boxes where they may run and hide themselves in diver corners of the room; then in the midst you shall have three Wheat-sheaves, two, with their ears upward, and one with the ears downward, and near unto them shallow tubs with water, that the fowl may peck Wheat out of the ears, and drink at their pleasures, and by this manner of feeding you shall have them as fat as is possible. As for your Quails, the best feeding them is in long flat shallow boxes, each box able to hold two or three dozen, the foremost side being set with round pins so thick, that the Quail do no more but put out her head; then before that open side shall stand one trough full of small chilter-wheat, another with water, and thus in one fortnight or three weeks you shall have them exceeding fat.

CHAP. XXIV.

Of Godwits, Knots, Gray-plover, or Curlews.

FOr to feed any of these fowls, which are esteemed of all other the daintiest and dearest, fine chilter-wheat, and water given them thrice a day, Morning, Noon, and Night, will do it very effectually; but if you intend to have them extraordinary and crammed fowl, then you shall take the finest drest wheat-meal, and mixing it with milk, make it into past, and ever as you knead it sprinkle into it the grains of small chilter-wheat, till the paste be fully mixt therewith: then make little small crams thereof, and dipping them in water give to every fowl according to his bigness, and that his Gorge be well filled; do thus as oft as you shall find their Gorges empty, and in one fortnight they will be fed beyond measure, and with these crams you may feed any fowl of what kind or nature soever.

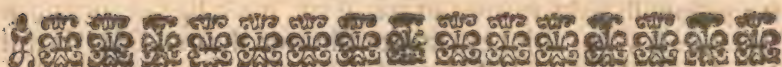
CHAP. XXV.

Of feeding Black-birds, Thrushes, Felfares, or any small Birds, whatsoever.

TO feed these birds, being taken old and wild, it is good to have some of their kinds tame to mix among them, and then putting

ting them into great cages of three or four yards square, to have divers troughs placed therein, some filled with Haws, some with Hempseed, and some with water, that the tame teaching the wild to eat, and the wild finding such change and alteration of food, they will in twelve or fourteen dayes grow exceeding fat, and fit for the use of the Kitchin.

The end of the Poultry.



Of Hawks.

CHAP. I.

Of the general Cures for all Diseases and Infirmities in Hawks, whether they be short-winged Hawks, or long-winged Hawks; and first of Castings.

HAwks are divided into two kinds, that is to say, short winged Hawks, as the Goshawk and her Tercel, the Sparrow-hawk and her Musket, and such like, whose wings are shorter than their trains, and do belong to the Ostringer; and long-winged Hawks, as the Faulcon gentle and her Tercel, the Gerfaulcon and Jerking, the Lanner, Merlin, Hobby, and divers others. Now forasmuch as their infirmities for the most part proceed from the indiscretion of their Governours, if they fly them out of season before they be inseamed, and have the fat, glut, and filthiness of their bodies scoured and cleansed out; I think it not amiss first to speak of Hawks castings; which are the naturallest and gentlest purges or scourings a Hawk can take, and doth the least offend the vital parts. Therefore you shall know, that all Ostringers do esteem plumage, and the soft feathers of small birds, with some part of the skin to be the best casting a short-winged Hawk can take, and for the purging of the head, to make her tire much upon

sheeps Rumps, the fat cut away, and the bones well covered with parilly. But for long-winged Hawks, the best casting is fine Flannel, cut into square pieces of an inch and half square, and all to be jagg'd, and so given with a little bit of meat. By these castings you shall know the soundness and unsoundness of your Hawk: for when she hath cast, you shall take up the casting, which will be like a hard round pellet, somewhat long, and press it between your fingers, and if you find nothing but clear water come from it, then it is a sign your Hawk is well and lusty; if there come from it a yellowish filthy matter, or if it stink, it is a sign of rottenness and disease; but if it be greazy or slimy on the one side, then it is a sign the Hawk is full of grease inwardly, which is not broken nor dissolved: and then you shall give her a scouring, which is a much stronger purgation; and of scouring the gentlest next casting, is to take four or five pellets of the yellow root of Scelladine well cleansed from filth, being as big as great pease, and give them out of the water early in the morning when the Hawk is fasting, and it will cleanse her mightily.

If you take the pellets of Scelladine, and give them out of the Oyl of Roses, or out of the syrup of Roses, it is a most excellent scouring also, only it will for an hour or two make the Hawk somewhat sickish. If you give your Hawk a little *Aloes Cicatrice*, as much as a bean wrapt up in her meat, it is a most sovereign scouring, and doth not only avoid grease, but also killeth all sorts of Worms whatsoever.

If your Hawk by over-flying, or too soon flying, be heated and inflamed in her body, as they are much subject thereunto, you shall then to cool their bodies give them stones: These stones are very fine white pibbles, lying in the Sands of gravelly Rivers, the bigness whereof you may choose according to the bigness of your Hawk, as some no bigger than a Bean, and those be for Merlins or Hobbies; some as big as two Beans and they are for Faulcons gentle, Lanners, and such like: and some much bigger than they, which are for Gerfaulcons, or such like. And these stones if they be full of crests and welts, they are the better, for the roughest stone is the best, so it be smooth and not greetty. And you shall understand, that stones are most proper for long-wing'd Hawks, and the number which you shall give at the most

must never exceed fifteen, for seven is a good number, so is nine or eleven, according as you find the Hawks heat more or less, and these stones must ever be given out of fair water, being before very well pickt and trimm'd of all dirt and filthiness. And thus much of Hawks castings, scourings, and stones.

CHAP. II.

Of Imposthumes in Hawks.

IF your Hawk have any Imposthume rising from her, which is apparent to be seen, you shall take sweet railins, and boyl them in Wine, and then cruthing them, lay them warm to the fore, and it will both ripen and heal it: only it shall be good to scour your Hawk very well inwardly, for that will abate the flux of all evil humours.

CHAP. III.

Of all sorts of sore eyes.

FOr any sore eye, there is nothing better than to take the juice of Ground-Ivy, and drop it into the Eye. But if any Web be grown before you use this medicine, then you shall take Ginger finely scarst, and blow it into the eye, and it will break the Web, then use the juice of Ivy, and it will wear it away.

CHAP. IV.

Of the Pantus in Hawks.

TH. Pantus is a stopping, or shortness of wind in Hawks, and the cure is to give her the scouring of S. Madine, and the oyl of Roses, and then to wash her meat in the decoction of *Coltsfoot*, and it will help her.

CHAP. V.

Of casting the Gorge.

TH. is when a Hawk, either through meat which she cannot digest, or through surfeit in feeding, casteth up the meat which she hath eaten, which is most dangerous. And the only way to cure her, is to keep her fasting, and to feed her with a very little at once of warm bloody meat, as not above half a Sparrow at a time, and be sure never to feed her again till she have indued the first.

CHAP.

CHAP. VI.

Of all sorts of Worms, or Fylanders in Hawks.

WOrms or Fylanders, which are a kind of Worms in Hawks, are either inward or outward; inward, as in the guts or intrails; or outward, as any joynt or member: if they be inward, the scouring of Aloes is excellent to kill them; but if they be outward, then you shall bath the place with the juice of the herb *Ameos* mixt with *Honey*.

CHAP. VII.

Of all swelling in Hawks feet, and of the pin in the foot.

FOr the pin in the sole of the Hawks foot, or for any swelling upon the foot, whether it be soft or hard, there is not any thing more soveraign, than to bath it in *Patch-grease* molten, and applied to, exceeding hot; and then to fold a fine Cambrick rag dipt in the same grease about the fore.

CHAP. VIII.

Of the breaking of a Pounce.

THis is a very dangerous hurt in Hawks, especially in *Ger-faulcons*; for if you break or rive her Pounce, or but coap it so short that she bleed, though it be very little, yet it will indanger her life: the cure therefore is, presently upon the hurt, with a hot Wier to sear it, till the bloud staunch, and then to drop about it pitch of Burgundy and wax mixt together, or for want thereof, a little hard Merchants wax, and that will both heal it, and make the Pounce grow.

CHAP. IX.

Of Bones broken or out of joynt.

IF your Hawk have any bone broken or misplaced, you shall after you have set it, bathe it with the oyl of *Mandrake* and *Swallows*, mixt together, and then splent it, and in nine dayes it will be knit, and have gotten strength.

CHAP.

CHAP. X.

Of inward bruifings in Hawks.

IF your Hawk either by stooping amongst Trees, or by the Encounter of some fowl, get any inward bruise, which you shall know by the blackness or bloodiness of their mutes, you shall then anoint her meat every time you feed her with *Sperma Cævi*, till her mutes be clear again, and let her meat be warm and bloody.

CHAP. XI.

Of killing of Lice.

IF your Hawk be troubled with Lice, which is a general infirmity, and apparent, for you shall see them creep all over on the outside of her feathers if she stand but in the air of the fire. You shall bath her all over in warm water and pepper small beaten, but be sure that the water be not too hot, for that is dangerous, neither that it touch her eyes.

CHAP. XII.

Of the Rye in Hawks.

THIS disease of the Rye in Hawks proceedeth from two causes; the one is cold and poze in the head, the other is foul and most uncleany feeding, the Faulconer being negligent to seek and cleanse his Hawks beak and nares, but suffering the blood and filthiness of meat to stick and cleave thereunto. For indeed the infirmity is nothing else but a stopping up of the nares: by means whereof the Hawk not being able to cast and avoid the corruption of her head, it turns to putrefaction, and in short space kills the Hawk: and this disease is a great deal more incident to short-winged Hawks than to long. The signs whereof are apparent by the stopping of the nares. The cure is to let your Hawk tyre much upon sinewy and bony meat, as the rumps of Mutton (the fat being taken away) or the pinions of the wings of fowl, either being well lapt in a good handful of Parsly, and forcing her to strain hard in the tearing of the same, and with much diligence to cleanse and wash her beak clean with water after her feeding, especially if her meat were warm and bloody.

CHAP.

CHAP. XIII.

Of the Frounce.

THE Frounce is a cankerous Ulcer in a Hawks mouth, got by over-flying, or other inflammation proceeding from the inward parts; foul and unclean food is also a great ingenderer of this disease. The signs are forenes in the Hawks mouth, which sore will be furr'd and cover'd over with white scurf, or such like filthiness; also if the Ulcer be deep and ill, the Hawk will wind and turn her head awry, making her beak stand upright; and the cure is to take Allom, and having beaten it to fine powder, mix it with strong Wine-vinegar, till it be somewhat thick, and then wash and rub the sore therewith till it be raw, and that the scurf be clean taken away. Then take the juice of *L. Li-um*, and the juice of *Radish*, and mixing it with Salt, anoint the sore therewith, and in few dayes it will cure it.

CHAP. XIV.

Of the Rheum.

THE Rhume is a continual running or dropping at the Hawks nares, proceeding from a general cold, or else from over-flying, and then a sudden cold taken thereupon; it stoppeth the head, and breeds much corruption therein, and the signs are the dropping before said, and a general heaviness, and sometimes a swelling of the head. The cure is, to take the juice of *Beets*, and squirt it oft into the Hawks nares. Then when you feed her, wash her meat in the juice of *Broomwort*, and it will quickly purge, and set her sound.

CHAP. XV.

Of the Fornicas in Hawks.

THE Fornicas in Hawks, is a hard horn growing upon the back of a Hawk, ingendred by a poysonous and cankerous Worm, which fretting the skin and tender yellow. Well between the head and the beak, occasioneth that hard horn or excretion to grow or offend the bird: the sign is the apparent sight of the horn, and the cure is, to take a little of a Bull's gall, and beating it with *Alocs*, anoint the Hawks beak therewith morning and

an evening, and it will in very few dayes take the horn away.

CHAP. XVI.

Of the Fistula in Hawks.

THe Fistula in hawks is a cankerous, hollow Ulcer in any part of a Hawks body, as it is in mens, beasts, or any other creature: the signs are a continual mattering or running of the sore, and a thin sharp water like Lie, which as it falls from the same, will fret the sound parts as it goeth. The cure is, with a fine small **The Cure.** wiar, little stronger than a Virginal wiar, and wrapt close about with a soft sleaved silk, and the point blunt and soft, to search the hollownes and crookednes of the ulcer, which the pliantnes of the wiar will easily do; and then having found out the bottom thereof, draw forth the wiar, and according to the bigness of the Orifice make a tent of fine lint being wet, which may likewise bend as the wiar did, and being within a very little aslong as the ulcer is deep; for to tent it the full length is ill, and will rather increase than diminish the Fistula, and therefore ever as the Fistula heals, you must take the Tent shorter and shorter. But to the purpose; when you have made your Tent fit, you shall first take strong Allom-water; and with a small Syringe squirt the sore three or four times therewith, for that will cleanse, dry, and scour every hollownes in the ulcer: then take the tent and anoint it with the juice of the herb *Robert*, *Vinegar*, and *Allom* mixt together, and it will dry up the Sore.

CHAP. XVII.

Of the Privy Evil in Hawks.

THe privy Evil in hawks is a secret heart-sicknes, procured either by overflying, corrupt food, cold, or other disorderly keeping; but most especially for want of Stones or casting in the due season: the signs are, heaviness of head and countenance, evil enduing of her meat, and fowl black mutings. The cure is, to take morning and evening a good piece of a warm sheeps heart, and steeping it either in new Asses milk, or new Goats milk, or for want of both, the new milk of a red Cow, with the same to feed your hawk, till you see her strength and lust recovered.

CHAP. XVIII.

Of wounds in Hawks.

HAwks, by the crosse encounters of fowls, especially the Heron, by stooping amongst bushes, thorns, trees, and by divers such accidents, do many times catch sores, and most grievous wounds, the signs whereof are the outward appearance of the same. And the cure is, if they be long and deep, and in place that you may conveniently, first to stitch them up, and then to taint them up with a little ordinary Balsamum, and it is a present remedy. But if it be in such a place as you cannot come to stitch it up, you shall then only take a little Lint, and dip it in the juice of the herb called *Mouf-ear*, and apply it to the sore, and it will in short space heal it. But if it be in such a place as you can by no means bind any thing thereunto, you shall then only anoint or bath the place with the aforesaid juice, and it will heal and dry up the same in very short time. The juice of the green herb called with us, English Tobacco, will likewise do the same: for it hath a very speedy course in healing and cleansing, as hath been approved by divers of the best Faulconers in this Kingdom, and other nations.

CHAP. XIX.

Of the Apoplexy, or falling Evil in Hawks.

THe Apoplexy, or falling evil in hawks, is a certain Vertigo or dizziness in the brain, proceeding from the oppression of cold humours, which do for a certain space numb, and as it were mortifie the senses. The signs are a sudden turning up the hawks head, and falling from her perch without bating, but only with a general trembling over all the body, and lying so, as it were in a trance a little space, she presently recovereth, and riseth up again, but is sick and heavy many hours after. The cure therefore is, to gather the herb *Asterion* when the Moon is in the Wain, and in the sign *Virgo*, and taking the juice thereof to wash your hawks meat therein, and to feed her, and it hath been found a most soveraign medicine.

The Cure.

CHAP.

CHAP. XX.

Of the purging of Hawks.

THERE is nothing more needful to lawes than purgation, and cleansings, for they are much subject to fat and foulness of body inwardly, and their exercise being much and violent, if there be neglect, and that their Glut be not taken away, it will breed sickness and death; therefore it is the part of every skilful Faulconer, to understand how and when to purge his Hawk, which is generally ever before she be brought to flying, and the most usual season for the same is before the beginning of Autumn, for commonly knowing Gentlemen will not flye at the Partridge, till corn be from the ground; and if he prepare for the River early, he will likewise begin with that season: the best purgation then that you can give your hawk, is *Aloes Cicatrine* wrapt up in warm meat the quantity of a French-pease, and so given the hawk to eat ever the next morning after she hath flown at any train, or taken other exercise whereby she may break or dissolve the Grease within her.

CHAP. XXI.

Of the purging of Hawks.

IF your Hawk cannot mute, as it is a common infirmity which happeneth unto them, you shall take the Lean of Pork, being newly kill'd, whilst it is warm, to the quantity of two Walnuts, and lapping a little *Aloes* therein, give it the hawk to eat, and it will presently helper. There be divers good Faulconers in this case which will take the roots of Selandine, and having cleansed it and cut it into little square pieces as big as Pease, steep it in the oyl of Roses, and so make the Hawk swallow down three or four of them, and sure this is very good and wholsom, only it will make the Hawk exceeding sick for two or three hours after. Neither must the hawk be in any weak state of body when this later medicine is given her. Also, you must observe to keep your hawk at those times exceeding warm, and much on your fist, and to feed her most with warm birds, lest otherwise you clung and dry up her entrails too much, which is both dangerous and mortal.

CHAP. XXII.

The assured sign to know when a Hawk is sick.

HAwks are generally of such a stout, strong, and unyeilding nature, that they will many times cover and conceal their sicknesses so long, till they be grown to that extremity, that no help of Physick or other knowledge can avail for their safety: for when the countenance or decay of stomach, which are the ordinary outward faces of infirmities, appear, then commonly is the disease past remedy. Therefore to prevent that evil, and to know sickness whilst it may be cured, you shall take your hawk, and turning up her Train, if you see that her Tuel or fundament either swelleth, or looketh red, or if her eyes or ears likewise be of a fiery complexion, it is a most infallible sign that the hawk is sick, and much out of temper.

CHAP. XXIII.

Of the Feaver in Hawks.

HAwks are as much subject to feavers as any creatures whatsoever, and for the most part they proceed from overflying, or other extraordinary heats, mixt with sudden colds, given them by the negligence of unskillful keepers. And the cure is, to set her in a cool place upon a perch, wrapt about in her cloaths, and feed her oft with a little at a time of chickens flesh steeped in water, wherein hath been soaked Cucumer-seeds. But if you find by the stopping of her ears or head, that she is offended more with cold than heat, then you shall set her in a warm place, and feed her with the bloody flesh of Pidgeons, washt either in White-wine, or in water, wherein hath been boiled either Sage, Marjoram, or Camomil.

The Cure.

CHAP. XXIV.

To help a Hawk that cannot digest her meat.

IF your Hawk be hard of digestion, and neither can turn it over, nor empty her panel, which is very often seen, you shall then take the heart of a Frog, and thrust it down into her throat, and pull it back again by a thread fastned thereunto once or twice suddenly, and it will make her cast her Gorge presently.

CHAP.

CHAP. XXV.

Of the Gout in Hawks.

HAwks, especially those which are free and strong strikers, are infinitely subject to the Gout, which is a swelling, knotting, and contracting of a Hawks feet. The cure thereof is, to take two or three drops of blood from her thigh-vein, a little above her knee, and then anoint the feet with the juice of the herb Hollihock, and let all her Pearch be anointed also with tallow, and the juice of that herb mixt together. Now if this disease (as oft it hapneth) be in a hawks wing, then you shall take two or three drops of blood from the vein under her wing, and then anoint the Pinions and inside thereof with *Unguentum de Alibea*, made very warm, which you may buy of every Apothecary.

CHAP. XXVI.

Of the Staun-ning of Blood.

IT is a known experience amongst the best Faulconers, that if the Gerfaulcon shall but lose two or three drops of blood it is mortal, and the hawk will dye suddenly after; which to prevent, if the blood proceed from any Pounce, which is most ordinary, then upon the instant hurt you shall take a little hard Merchants Wax, and drop it upon the sore, and it will presently stop it; if it be upon any other part of the hawks body, you shall clap thereunto a little of the soft down of a Hare, and it will immediately stanch it; without these two things a good Faulconer should never go, for they are to be used in a moment. And thus much of the Hawk, and her diseases.

Of Bees.

CHAP. I.

Of the nature, ordering, and preservation of Bees.

OF all the creatures which are behoveful for the use of man, there is nothing more necessary, wholsome, or more profitable than the Bee; nor any less troublesome, or less chargeable. To speak first of the nature of Bees, it is

The nature of
Bees,

a creature gentle, loving and familiar about the man, which hath the ordering of them, so he comes neat, sweet and cleanly amongst them, otherwise if he have strong and ill smelling savours about him, they are curst and malicious, and will sting spitefully, they are exceeding industrious and much given to labour, they have a kind of government amongst themselves, as it were a well ordered Common-wealth, every one obeying and following their King or Commander, whose voice (if you lay your ear to the hive) you shall distinguish from the rest, being louder and greater, and beating with a more solemn measure. They delight to live among the sweetest herbs, and flowers, that may be, especially Fennel, and Wall Gilly flowers, and therefore their best dwellings are in Gardens; and in these Gardens, or near adjoining thereunto, would be divers fruit-trees growing, chiefly Plum-trees, or Peach-trees; in which when they cast, they may knit, without taking any far flight, or wandring to find out their rest. This Garden also would be well fenced, that no Swine nor other Cattel may come therein, as well for overthrowing their Hives, as also for offending them with their ill savours. They are also very tender, and may by no means indure any cold; wherefore you must have a great respect to have their houses exceeding warm, close, and tight, both to keep out the frost and snow, as also the wet and rain; which if it once enter into the Hive, it is a present destruction.

Of the Bee-
Hive.

To speak then of the Bee-hive, you shall know there be divers opinions touching the same, according to the customes and natures of Countries; for in the champion countries, where there is very little store of woods, they make their Hives of long Rye Straw, the rouds being sowed together with Bayers; and these Hives are large and deep, and even proportioned like a Sugar-loaf, and cross-barr'd within, with fat splints of Wood, both above and under the midst part. In other Champian Countries where they want Rye-straw they make them of Wheat-straw, as in the West Countries, and these hives are of a large compass, but very low and flat, which is naught, for a hive is better for his largeness, and keepeth out the rain best when it is sharpest. In the wood countries they make them of cloven hazels, wattel'd about, with broad splints of Ash, and so formed, as before I said, like a Sugar-loaf, And

And these Hives are of all other the best, so they be large and smooth within, for the Straw-hive is subject to breed Mice, and nothing destroyeth Bees sooner than they, yet you must be governed by your ability, and such things as the Soil affords.

Now for the Wood-hive which is the best, you shall thus trim and prepare it for your Bees: you shall first make a stiff mortar of Lime and Cow-dung mixed together; and then having cross barred the Hive within, daub the out-side of the Hive with the mortar at least three inches thick, down close unto the stone, so that the least Air may not come in: then take a Rye-sheaf, or Wheat-sheaf or two that is baled, and not thrashed, and chusing out the longest straws bind the ears together in one lump, put it over the Hive, and so as it were thatch it all over, and fix it close to the Hive with an old hoop, and this will keep the hive inwardly as warm as may be; also, before you lodge any Bee in your hive, you shall perfume it with Juniper, and rub it all within with Fennel, Hyssop, and Tyme-flowers, and also the Stone upon which the Hive shall stand.

Of the trimming of the Hive.

Now for the placing of your hive, you shall take three long thick stakes, cut smooth and plain upon the heads, and drive them into the earth triangular-wise, so that they may be about two foot above the ground: then lay over them a broad smooth paving stone, which may extend every way over the stakes above half a foot: and upon the stone set your hive, being less in compass than the stone by more than six inches every way; and see the door of your hive stand directly upon the rising of the morning Sun, inclining a little unto the Southward: and be sure to have your Hives well sheltered from the North-winds, and generally from all tempestuous weather: for which purpose if you have Sheads to draw over them in the winter, it is so much the better. And you shall place your Hives in orderly rows one before another, keeping clean allies between them every way, so as you may walk and view each by it self severally.

The placing of Hives.

Now for the casting of your Bees, it is earlier or later in the year, according to the strength and goodness of the Stock, or the warmth of the weather. The usual time for casting, is from the beginning of May till the middle of July; and in all that time you must have a vigilant eye, or else some servant to watch their rising, lest they fly away, and knit in some obscure place far from

from your knowledge: yet if you please, you may know which Hives are ready to cast a night before they do cast, by laying your ear after the Sun-set to the Hive, and if you hear the Master-Bee above all the rest, in a higher and more solemn note, or if you see them lye forth upon the stone, and cannot get into the hive, then be sure, that the stock will cast within few hours after.

As soon as you can perceive the Swarm to rise, and are got up into the air, (*which will commonly be in the height and heat of the Sun*) you shall take a Brass Basin, Pan, or Candlestick, and make a tinkling noise thereupon, for they are so delighted with Musick, that by the sound thereof they will presently knit upon some branch or bow of a Tree. Then when they are all upon one cluster, you shall take a new sweet Hive well drest, and rubb'd with Honey and Fenne', and shake them all into the hive; then having spread a fair sheet upon the ground, set the hive thereon, and cover all clean over close with the sheet, and so let it stand till after Sun-set; at which time the Bees being gathered up to the top of the hive (as their nature is) you shall set them upon the stone having rubb'd it with Fennel; and then daub it close round about with lime and dung mixt together, and only leave them a door or two to issue out and in at. There be some stocks which will cast twice or thrice, and four times in a year; but it is not good, for it will weaken the stock too much; therefore to keep your stocks in strength and goodness, it is not good to suffer any to cast above twice at the most.

Again, you shall with pieces of Brick, or other smooth stones, raise the stock in the night, three or four inches above the stone, and then daub it close again, and the Bees finding house-room, will fall to work within, and not cast at all; and then will their stocks be worth two others. And in the same manner, if you had the year before any small swarms, which are likely to cast this year, or if you have any early swarms this year, which are likely to cast at the later end of the year: both which are often found to be the destruction of the stocks: in either of these cases you shall enlarge the hive, as it is before said, by raising it up from the stone, and it will not only keep them from casting, but make the stock better, and of much more profit; for that hive which is of the most weight, is of the best price.

Now

Now when you have markt out those old Stocks, which you intend to sell (*for the oldest is fittest for that purpose*) you shall know, that the best time to take them is at *Michaelmas*, before any Frosts hinder their labour: and you shall take them ever from the stone in the dark of the night when the air is cold, and either drown them in water, or smother them with Fusbals; for to chase them from their Hives, as some do, is naught, because all such Bees as are thus frightened from their Hives, do turn Robbers, and spoil other Stocks, because that time of the year will not suffer them to labour, and get their own livings.

Now if you have any weak Swarms, which coming late in the year cannot gather sufficient of Winter-provision; in this case you shall feed such stocks by daily smearing the stone before the place of their going in and out, with Honey and Rose-water mixt together, and so you shall continue to do all the strength of Winter, till the warmth of the Spring, and the Sun-shine bring forth store of flowers for them to labour on. You shall continually look that no Mice, and such like vermine breed about the Hives, for they are poysonous, and will make Bees forsake their Hives.

Now lastly, if any of your stocks happen to dye in the Winter, (as amongst many some must quail) you shall not by any means stir the stock, but let it remain till the Spring, that when you see your Bees begin to grow busie, then take up the dead stock, and trim it clean from all filth, but by no means stir or crush any of the Combs; then dash the Combs, and besprinkle them, and besmear all the inside of the Hive with honey, Rose-water, and the juice of Fennel mixt together, and daub also the stone therewith. Also then set down the Hive again, and daub it as if it had never been stirred, and be well assured, that the first Swarm which shall rise, either of your own, or of any neighbours of yours within the compass of a mile, it will knit in no place but within that Hive, and such a stock will be worth five others, because they find half their work finished at their first entrance into the Hive; and this hath been many times approved by those of the most approved experience. And thus much touching the Bee and his Nature.

A Platform for Ponds, which the Printer hath added to this ensuing discourse, for the better satisfaction and delight of such as having a convenient Plat of ground for the same purpose, shall be desirous to make any Ponds for the increase and store of Fish.

G. The Gate.

D. The Ditch and Quickset Hedge.

W. The Walks.

B. The Bridge.

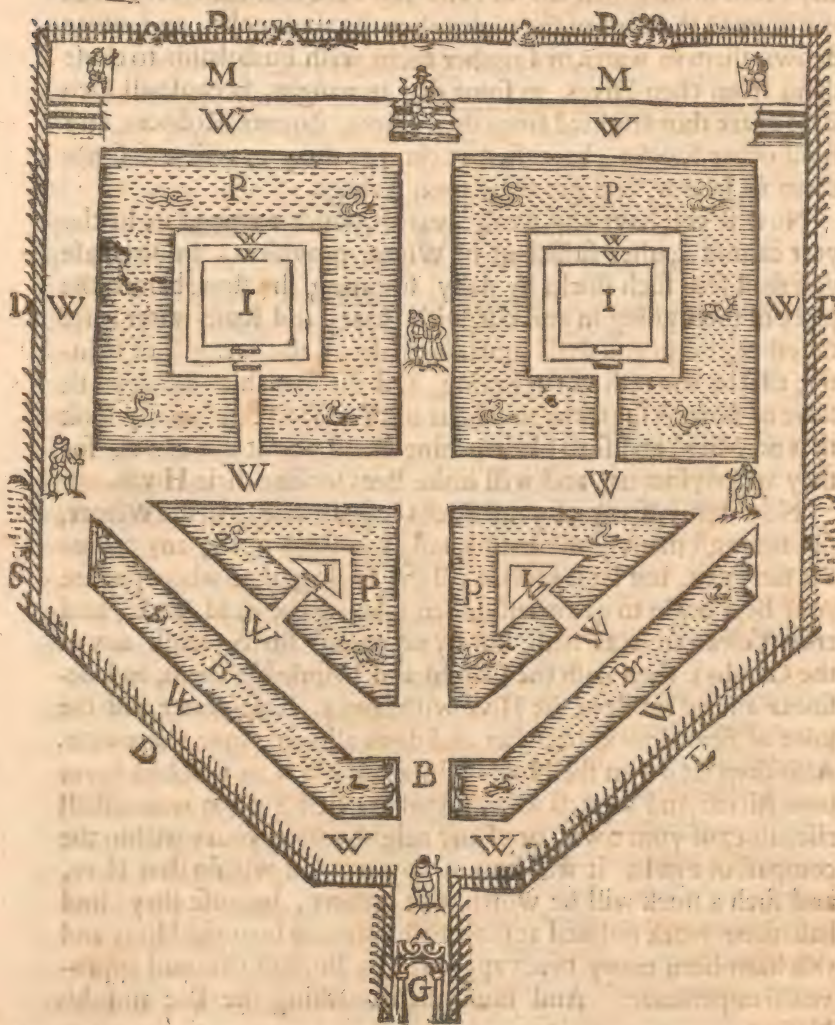
F. The Brook.

P. The Ponds.

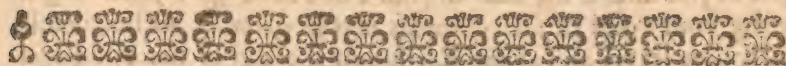
I. The Peniles.

M. The Mount.

S. The Spring.



The Walls about the Ponds may be planted with Fruit, Trees, or Willows.



Of Fishing.

CHAP. I.

Of Fishing in general; and first of the making of the Fish-Pond.

FOrasmuch as great Rivers do generally belong either to the King, or the particular Lords of several Mannors, and that it is only the Fish-pond which belongeth to private persons, I will as a thing most belonging to the general profit, here treat of Fish-ponds. And first touching the making of them, you shall understand, that the Grounds most fit to be cast into Fish-ponds, are those which are either marishy boggy, or full of Springs, and indeed most unfit either for grazing, or any other use of better profit. And of these grounds, that which is full of clear Springs will yield the best water; that which is marishy will feed Fish, and that which is boggy will defend the Fish from being stolne.

Having then such a piece of wast Ground, and being determined to cast it into a Fish-pond, you shall first by small trenches draw all the springs or moist veins into one place, and so drain the rest of the Ground, and then having markt out that part which you mean to make the head of your pond, which although it be the lowest part in the true level of the Ground, yet you shall make it the highest in the eye; you shall first cut the trench of your flood-gate, so as the water may have a swift fall, when you mean at any time to let it out; and then on each side of the trench drive in great stakes of six foot in length, and six inches square, of Oak, Ash, or Elm, but Elm is the best, and these you must drive in rowes within four foot one of another, at least four foot into the earth, as broad and as far off each side the Flood-

gate as you intend the head of your Pond shall go; then begin to dig your Pond of such compass as your ground will conveniently give leave, and all the Earth you dig out of the Pond you shall carry and through amongst the stakes, and with strong rammers ram the Earth hard between them, till you have covered all the stakes; then drive in as many more new stakes besides the heads of the first, and then ramme more Earth over and above them also: and thus do with stakes above stakes till you have brought the head-sides to such a convenient height as is fitting. And in all this work have a special care that you make the inside of your banks so smooth, even, and strong, that no current of the water may wear the Earth from the stakes.

You shall dig your Fish-pond not above eight foot deep, and so as it may carry not above six foot water.

You shall pave all the bottom and banks of the Pond with large sods of Flot-grass, which naturally grows under water, for it is a great feeder of fish: and you shall lay them very close together, and pin them down fast with small stakes and windings. You shall upon one side of the Pond, in the bottom, stake fast divers Bavens or Faggots of Brush-wood, wherein your Fish shall cast their Spawn, for that will defend it from destruction; and at another place you shall lay Sods upon Sods, with the grass sides together, in the bottom of the Pond, for that will nourish and breed Eels: and if you stick sharp stakes likewise by every side of the Pond, that will keep Theeves from robbing them. When you have thus made your Ponds, and have let in the water, you shall then store them; Carp, Bream, and Tench, by themselves; and Pike, Pearch, Eel, and Tench by themselves: for the Tench being the Fishes Physician is seldom devoured: also in all Ponds you shall put good store of Roch, Dace, Loch, and Menew; for they are both food for the greater Fishes, and also not uncomely in any good mans Dish.

You shall also to every Melter put three Spawners, and some put five, and in three years the increase will be great, but in five hardly to be destroyed, And thus much for Ponds, and their storings.

CHAP. II.

Of the taking of all sorts of Fish, with Nets, or otherwise.

IF you will take Fish with little or no trouble, you shall take of *Sal Armoniack* a quarter of an ounce, of young *Chives*, and as much of a Calves-Kell, and beat them in a mortar untill it be all one substance, and then make Pellets thereof, and cast them into any corner of the Pond, and it will draw thither all the Carp, Bream, Cheven, or Barbel, that are within the water; then cast your Shove-net beyond them, and you shall take choice at your pleasure. If you will take Roch, Dace, or any small kind of fish, take Wine-lees, and mix it with Oyl, and hang it in a Chimney-corner till it be dry or look black; and then putting it into the water, they will come so abundantly to it, that you may take them with your hand. If you will take Trout, or Grailling, take two pound of Wheat-bran, half so much of white Pease, and mixing them with strong brine, beat it till it come to a perfect Past: then put pellets thereof into any corner of the water, and they will resort thither, so as you may cast your Net about them at your pleasure. But if you will take either Pearch or Pike, you shall take some of a Beasts Liver, black Snails, yellow Butterflies, Hogs blood, and *Opoanax*, beat them altogether, and having made a Past thereof, put it into the water, and be assured that as many as are within forty paces thereof will presently come thither, and you may take them at your pleasure.

Lastly, if you take either two drams of Cock-stones or twice so much of the Kernels of Pine-apple tree burnt, and beat them well together, and make round balls thereof, and put it into the water, either fresh or salt, any Salmon or great Fish will presently resort thither; you may take them either with Net, or otherwise.

Also it is a most approved Experiment, That if you take bottles made of Hay, and green Oziers, or Willow mixt together, and sink them down in the mid^dst of your Pond, or by the bank-sides, and so let them rest two or three dayes, having a Cord so fastned unto them, that you may twitch them up on Land at your pleasure: believe it, all the good Eels which are in the

the Pond will come unto those bottles, and you shall take them most abundantly: and if you please to bait those Bottles by binding up Sheeps-guts, or other garbage of Beasts within them, the Eels will come sooner, and you may draw them oftner, and with better assurance. There be other wayes besides those to take Eels, as with Weels, with the Eel-spear, or with bobbing for them with great Worms; but they are so generally known and practised, and so much inferiour to this already shewed, that I hold it a needless and vain labour to trouble your ears with the repetitions of the same; and the rather, sith in this work I have laboured only to declare the secrets of every knowledge, and not to run into any large circumstance of those things which are most common and familiar to all men. And thus much of Fish and Fish-ponds, and their general knowledge. Now as touching the Angle, and the Secrets thereto belonging, you shall find it at large handled in the next Book, called *Country Contentments*.

FINIS.



The Table of the First Book.

Of Beasts,

Of the Horse.

O f the Horse in general	p.1	His first Backing	ib.
Nature of Horses	2	Three main points of a Horse- man's skill	12
Choice of Horses, and their shapes	ib.	Of helps, and what they be	ib.
Colours of Horses	ib.	Of corrections, and which they be	ib.
Horses for a Princes seat	3	Of cherishings	13
Horses for travel	ib.	Of the Muscote and Martingale	ib.
Hunting horses	ib.	Of treading the large rings	14
Running horses.	ib.	Choice of grounds	ib.
Coach Horses	4	Of galloping large rings	15
Pack Horses	ib.	Helps in the large ring-turns	16
Cart Horses	ib.	Corrections in the ring-turns	ib.
Of Mares	ib.	Cherishing in the ring-turns	17
Ordering horses for service	5	Of stopping and going back	ib.
Ordering horses for a Princes seat.	ibid.	Helps	18
Ordering of travelling horses	ib.	Corrections	ib.
Ordering of Hunting horses	6	Cherishings	ib.
Ordering of Running horses	ib.	Of advancing before	19
Ordering of Coach horses	7	Helps	ib.
Ordering of the Pack, or Cart- horse	ib.	Corrections	ib.
The preservation of horses	ib.	Cherishings	20
Of riding in general	8	The use of advancing	ib.
Imperfect use of this recreation	ib.	Of yerking behind	ib.
		Helps	21
The pleasure of riding	ib.	Corrections	ib.
The Authors Apology	9	Cherishings	ib.
The taming of a young Colt	ib.	Of turning	ib.
His sadling and bridling	10		

The Table.

Helps	23	make them amble	ib.
Corrections	ibid.	The marks of a good traveling	ib.
Chastisings	ibid.	Horse	ib.
Of the Turning-Post	24	To make a Horse amble	ib.
Of managing	25	Divers ways of Ambling	37
Diversities of manages	26	Of traveling	ib.
Of the Career	ib.	Of wisping	ib.
Horses for pleasure	27	Helps in Ambling	ib.
Of bounding aloft	ib.	The ordering and dieting of the	ib.
Of the Corvet	ib.	Hunting-Horse	38
Of the Gallop Galliard	28	Taking up the Hunting-horse	ib.
Of the Capriole	29	Cloathing the Hunting-horse	ib.
Of going aside	ib.	Dressing the Hunting-horse	39
Of riding before a Prince	30	Of watering and feeding the Hun-	ib.
Of the Caragolo	ib.	ting-horse	40
To ride for Recreation	31	The exercise of the Horse	42
Of breeding of all sorts of Hor-	ib.	The scouring of the Horse	ib.
ses fit for the Husbandmans use	ibid.	Ordering of a Horse after exer-	ibid.
Grounds to breed on	32	cise	ibid.
Division of Grounds	33	Of ordering, dieting, taking up,	ib.
Choice of the Stallion	ib.	cloathing, dressing, watering,	ib.
Choice of Mares	ib.	and feeding the Running	ib.
When to put them together	ib.	Horse	42
Of covering Mares	ib.	Of his exercise by airing and	ib.
To know if a Mare hold	34	coursing	45
To conceive Male-Foals	ib.	Of Sweats	ib.
To provoke Lust	ib.	Of scouring him	ib.
To keep Mares from barrenness	ib.	Ordering after exercise	ib.
Ordering Mares after covering	ib.	General Rules for a Running	ib.
A help for Mares in Foaling	35	Horse	46
Ordering Mares after Foaling	ib.	General Rules for a Traveling	ib.
Weaning of Foals	ib.	Horse	47
Ordering after Weaning	ib.	How to cure all inward sicknesses	48
Gelding of Colts	36	Of the Head-ach, Frenzie, or	ib.
Of Horses for travel, and how to		Staggers	ibid.
		Of the sleeping Evil	49
		Of the falling Evil, Planet-	ib.
		struck	

The Table.

Struck Night-mare, or palfie.	shedding of seed.	56
ib.	Of the particular diseases of	
Of the generall cramp, or convulsion of sinews	Mares, as barrenness, consumption, rage of love, casting, foals, hardnesse to foal, and to make a Mare cast her foal	ib.
Of any cold or cough, wet or dry, or for any consumption or putrifaction of the Lungs what-soever	Of drinking venome, &c.	57
ib.	Of suppositories, Clusters, and purgation	ib.
Of the running Glaunders, or mourning of the chins	Of Neesings and Frictions	58
Of hide-bound, or consumption of the flesh	Of all the diseases in the eyes	ib.
Of the breast pain, or any sickness of the heart	Of the Imposthume in the ear, Pole-evil, Fistula, swelling after blood-letting, any gald-back, Canker, sit-fast, Wenns, Navil-gall, &c.	ib.
Of tyred horses	ib.	
Of diseases of the stomach, as surfeits, loathing of meate, or drink	Of the Vives	59
Foundring in the body	Of the Strangle, Bile, Botch or Imposthume	ib.
The Hungry evil	Of the Canker in the Nose, or any other part	ib.
Diseases in the Liver, &c.	Of staunching blood in any part	ib.
Of the Yellowes and diseases of the Gall	ib.	
Of the sickness of the Spleen	Of the diseases in the mouth, as bloody rifts, Figs, Lampas, Camery, Inflammation, tongue hurt, or the Barbs	60
Of the Dropsie, or evil habit of the body	Of pain in the teeth, or loose teeth	ib.
Of the Chollick, Belly-ake, or Belly bound	ib.	
Of the Lax or Bloody-Flux	Of the crick in the neck	ib.
Of the falling of the Fundament	Of the falling of the Crest, manginess in the main, or shedding of hair	61
55	ib.	
Of Bots and Worms of all sorts	Of pain in the withers	ib.
ib.	Of swaying the back, or weakness in the back	ib.
Of pain in the Kidneys, pain to piss, and Stone	Of the itch in the tayle, scab, manginess, farcy	ib.
Of the Strangullion	X	Of
Of pissing blood		
Of the Colt-evil, mattering of the yard, falling of the yard,		

Of any halting whatsoever, &c.	61	pricking, fig, retraits, or choying	66
Of foundring in the Feet	62	To draw out a stub or thorn	ib.
Of the splent, curb, bone-spaven, or any knob, or bony excreffion or ring-bone	63	Of any Ambury or Tetter.	ib.
Of the Mallander, Sellander, Painer, Scratches, Mallat, Mules, Crown-scab, &c.	ib.	Of the cords or string-halt	ib.
Of any upper attaint or neather, or any over-reaching	ib.	Of spur-galling, &c.	67
Of all the infirmities of, in, or ab ut the hoofs, &c.	ibid.	To heal any sore or wound	ib.
Of the blood-spaven, bough, bony or any other unnatural swelling	ibid.	Of sinews cut	ibid.
Of Wind-gals.	ibid.	Of eating away dead flesh	ib.
Of enterfeating, shackle-gall, &c.	ibid.	Of knots in joynts	ib.
Hurts on the Cronet, as Quil- ter-bone or Mailong	ib.	Of venomous wounds, &c.	ib.
Of wounds in the foot, gravelling		Of Lice or Nits	ib.
		To defend a horse from flies	68
		Of bones broken, or out of joynt	ib.
		Of drying or skinning sores where they are almost whole	ib.
		A most famous Receipt to make a horse that is lean, & that is full of inward sicknesse, sound and fat, in fourteen dayes	ib.
		To make a white star	69

Of the Bull, Calf, Cow, or Oxe.

Of the Bull, Cow, Calf, or Oxe, &c.	69	To preserve Cattel in health	ib.
The Countries for breed	70	Of the Feaver in Cattel	73
Of not mixing, and mixing breeds	ib.	Of any inward sicknesse	ib.
The shape of the Bull	ib.	Of the diseases in the head, as the sturdy, &c.	ib.
The use of the Bull	ib.	Of all the diseases in the eyes of Cattel, &c.	ibid.
The shape of the Cow	ib.	Of diseases in the Mouth, as Barbs, Bleans, &c.	74
The use of the Cow	71	Of diseases in the Neck, as be- ing galled, bruised, swollen, clish &c.	75
Of Calves, and their nourishing	ibid.	Of the Pestilence, Gargill or Murrain	ib.
Observations for Calves	ib.		Of
Of the Oxe and his use	ib.		
Of the Oxes food for labour	72		
Oxen to feed for the Butcher	ib.		

The Table.

Of misliking, or leanness	76	Soal, &c.	ib.
Of diseases in the Guts, as flux, costiveness	ib.	Of all kind of bruising	80
Of pissing blood	ib.	Of swallowing hens-dung, or any poyson	ib.
Of dropping nostrils, or any cold	ib.	Of killing Lice or Tick	ib.
Of all manner of swellings	77	Of the dew-bowle	ib.
Of the Worm in the tayl	ib.	Of the losse of the Cud	81
Of any Cough or shortnesse of breath	ib.	Of the killing of all sorts of worms	ib.
Of any Imposthume, Bile or Botch	ib.	Vomiting blood	ib.
Of diseases in the sinews, as weakness, stiffnesse or soreness	ib.	Of the Gout	ib.
Of the generall scab, particular scab or scurf	78	Of the milking	ib.
Of the hide-bound, or dry skin	ib.	Of provoking a Beast to piss	82
Of diseases in the lungs, as lung-grown, &c.	ib.	Of the over-flowing of the galib.	ib.
Of the biting with a mad dog, or other venomous beasts	79	Of a Beast that is goared	ib.
Of the falling down of the palate	ib.	Of the Cow that is whetthered	ib.
Of any pain in the hoof as the		Of drawing out of thorns, or stubs	ib.
		Of purging Cattel	ib.
		Of being shrew-run	83
		Of faintnesse	ib.
		Of breeding milk in a Cow	ib.
		Of bones out of joynt or broken	ib.
		Of the rot in Beasts	ib.
		Of the Pantus	84
		Of all manner of wounds	ib.

Of the Sheep.

O F Sheep, their use, choice, shape and preservation	85	and an unsound	88
Of the staple of wooll	ib.	Of sicknesse in Sheep, as the fever, &c.	ib.
Of the Lear of Sheep	ib.	Of the general Scab	ib.
The shape of Sheep	86	Of killing Maggots	89
When Ewes should bring forth	ib.	Of the Red-water	ib.
Ordering of Lambs	ib.	Of Lung-sick, or any Cough, or Cold	ib.
Needful Observations	87	Of the worm in the claw, or in	
The preservation of Sheep	ib.		
The signs to know a sound sheep,		X 2	any

The Table.

any other part	ib.	Of making an Ewe lve herown	
Of wild fire	ib.	Lamb, or any other Ewes	
Of the diseases of the gall, as		Lamb	ib.
Choller, Jaundice, &c.	90	Of licking up poyson	ib.
Of the tough flegm, or stoppings		Of Lambs, yeaned sick	93
	ib.	Of making an Ewe to be easily	
Of the bones broken, or out of		delivered	ib.
joynt	ib.	Of Teeth-loose	ib.
Of any sickness in Lambs	ib.	Of increasing milk	ib.
Of the sturdy turning-evill, or		Of the Staggers, or leaf-sickness	
more-found	91		ib.
Of all diseases in the eyes in ge-		Of all sorts of Worms	ib.
neral	ib.	Of the losse of the end	94
Of water in a Sheeps belly	ib.	Of saving sheep from the rot	
Of the tag'd or belt Sheep	ib.		ib.
Of the Pox in Sheep	92	A few Precepts for the Shepherd	
Of the Wood-evill or cramp	ib.		ib.

Of Goats.

OF Goats and their natures		Of stopping the Teats	98
	96	Of Goats that cannot kid	ib.
The shape of Goats	ib.	Of the Tetters, or dry Scab	ib.
The ordering of Goats	ib.	Of gelding Kids	ib.
Of any inward sickness, as the		Of the Itch in Goats	99
Pestilence, &c.	97	Of the Tuell stopping	ib.
Of the Dropfie	ib.	Of the Staggers	ib.

Of Swine.

OF all manner of Swine	99	Catarrhe	ibid.
The nature of Swine	ib.	Of the Gall in Swine	ib.
Of the choice & shape of Swine		Of the Meazels	103
	ib.	Of the Imposthumes in any part	
Of the use and profit of Swine			ibid.
	101	Of Vomiting	ib.
Of the Feaver, or any hidden		Of leanness, milke, scurf or	
sickness in Swine	102	manginess	ib.
Of Murrain, Pestilence, or			Of

The Table.

Of the sleeping Evil	104	Of feeding Swine either for Ba-	
Of pain in the Milt	ib.	con or Lard	ib.
Unnaturalness in Swine	ib.	Of feeding Swine in Wood-	
Of the Laxe or Flux	ibid.	Countries	106
Of the Lugging of Swine with		Of feeding at the Reek	ib.
Dogs	106	Of feeding Swine in or about	
Of the Pox in Swine	ib.	great Cities	ibid.
Of killing Maggots in any part.	ibid.	Of feeding Hogs for Lard, or	
		Bres for Brawn	ib.

Of Conies

Of tame Conies in generall	Conies.	109
108	Of the feeding and preservation	
The nature of the Cony	of Conies	ib.
Of boxes for tame Conies.	Of the rot amongst Conies	110
Of the choice and profit of rich	Of madness in Conies	ib.

The Table of the Second Book.

Of Poultry.

Of the Dunghill Cock, Hen,	Of the Capon, and when to carve	
Chicken, and Capon, 111	him	115
to 112.	Of the Capen to lead Chickens	
Of the Dunghill Cock		ib.
Of the choice and shape of the	Of feeding and cramming Ca-	
Cock,	pous	ib.
Of the Hen, her choice & shape	Of the Pip in Poultry	116
ibid.	Of the roup	ib.
Of setting Hens.	Of the Flux	ib.
Of the choice of Eggs	Of stopping in the belly	ib.
Of Chickens	Of lice in Poultry	ib.
Of feeding and cramming Chic-	Of stinging with venomous	
kens	Worms	117
Of preserving eggs	Of all sore Eyes	ib.
Of gathering Eggs	Of Hens which crow	ib.
	Of	

The Table.

Of Hens which eat their Eggs <i>ib.</i>	Of making Hens lean	118
Of keeping a Hen from sitting <i>ib.</i>	Of the Crow-trodden	<i>ib.</i>
Of making Hens lay soon and of <i>ib.</i>	Of the Hen-house scituation	<i>ibid.</i>

Of Geese.

Of the Goose in general	ring	<i>ib.</i>
119	Of Ganders	<i>ib.</i>
Of the choice of Geese <i>ib.</i>	Of fattening of elder Geese	<i>ib.</i>
Of laying eggs, and sitting <i>ib.</i>	Of gathering of Geese feathers	<i>ib.</i>
Of the ordering of Goslings 120		<i>ib.</i>
Of green Geese, and their fat-	Of the gargil in Geese	<i>ib.</i>

Of Turkeys.

Of Turkeys in general 121	Of the Turkey-Hen, and her sit-	
Of the choice of the Tur-	ting	<i>ib.</i>
key-Cock <i>ib.</i>	Of the feeding of Turkeys	122

Of Water-foul, and others.

Of the tame Duck 122	Of nourishing & fattening Hens,	
Of Wild Ducks, and their	Puets, Gulls, and Bitterns	
ordering <i>ib.</i>		125
Of Swans, and their feeding	Of feeding Partridge, Pheasant,	
123	and Quail	126
Of Pea-Cocks and Pea-Hens,	Of Godwits, Knots, Gray Plo-	
<i>ibid.</i>	ver or Curlew	<i>ib.</i>
Of the tame Pigeon, or rough-	Of black Hens, Thrushes, Fel-	
footed 124	fares	<i>ibid.</i>

Of Hawks.

Of Hawks in general of all	Imposthumes in Hawks	129
kinds 127	Of sore Eyes in Hawks	<i>ib.</i>
Of scowrings <i>ib.</i>		Of

The Table.

Of the Pantas	ib.	Of the privy-evill	133
Of casting the Gorge	ib.	Of all sorts of wounds	134
Of all sorts of Worms or Pild- ders	130	Of the Apoplexy, or falling e- vil	ib.
Of all swelling in Hawks feet	ib.	Of the purging of Hawks	135
Of the breaking of a Pounce	ib.	Of a Hawk that cannot mute.	ib.
Of bones broke, or out of joynt	ib.	The assuredst signs to know when a Hawk is sick	139
Of all inward bruising	131	Of the Feaver in Hawks	ib.
Of killing Lice	ib.	Of helping a Hawk that cannot digest	ib.
Of the Rie	ib.	Of the Gout in Hawks	137
Of the Frounce	132	Of the stanching of blood	ib.
Of the Rhums	ib.		
Of the Fornicas	ib.		
Of the Fistula	133		

Of Bees.

O F Bees in general	138	dering the swarms	ib.
Of the nature of Bees	ib.	Of setting hives	140
Of the Bee-hive	ib.	Of the preservation of weake stocks	ib.
Of the trimming of the hive.	139	An excellent Secres concerning Bees	141
Of the placing of hives	ib.		
Of the casting of Bees, and or-			

Of Fishing.

A Platform for Fish-ponds,	142	Of the taking of all sorts of Fish with Nets, or other- wise	144
Of Fishing in general	143		



The Division of the Titles treated of in these Books.

- F**irst, Of the *Horse*, his Nature, Diseases, and Cures ; with the whole Art of riding, and ordering all sorts of *Horses*, from fol. 1. to 70.
2. Of the *Bull*, *Cow*, *Calf*, or *Oxe*, their breeding, feeding, and curing, from fol. 70. to 83.
 3. Of *Sheep*, their choice, use, shape, infirmities and preservation, from fol. 83. to 96.
 4. Of *Goats*, their nature, shape, ordering and curing, from fol. 96. to 100.
 5. Of *Swine*, their choice, breeding, curing, and feeding, in either *Champion*, or *Wood Countries*, from fol. 100. to 107.
 6. Of tame *Conies*, from fol. 107. to 111.
 7. Of *Poultry*, their ordering, fatting, cramming, and curing all the diseases to them incident, from fol. 111 to 128.
 8. Of *Hawks*, either short-winged, or long-winged ; the general Cures for their diseases and infirmities, from fol. 128. to 138.
 9. Of *Bees*, their ordering, profit, and preservation, from fol. 138. to 142.
 10. Of *Fishing*, and making *Fish-Ponds*, from fol. 142. to the end.

FINIS.

Markham's Farewel to
HUSBANDRY:

OR,

**The Enriching of all sorts of Barren and
Sterile Grounds in our Nation, to be as
Fruitful in all manner of Grain, Pulse, and
Grass, as the best Grounds whatsoever.**

**Together with the Annoyances and Preservation of all
Grain and Seed, from one year to many years.**

**As also a Husbandly computation of Men and Cattels
daily Labours, their Expences, Charges, and utmost profits.**

**Now newly the Tenth time revis'd, corrected and amen-
ded, together with many new Additions, and cheap Experiments.**

**For the bettering of Arable Pasture, and
Woody Grounds: Of making good all Grounds
again, spoiled with over-flowing of Salt water by
Sea breaches; as also the enriching of the Hop-
Garden. And many other things never
published before.**

By **G. Markham.**

LONDON,

**Printed for George Sawbridge, at the Sign of the Bible
on Ludgate-Hill, 1676.**

17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

THE UNIVERSITY OF CHICAGO

LIBRARY

OF THE

UNIVERSITY OF CHICAGO

OF THE

UNIVERSITY OF CHICAGO

OF THE

UNIVERSITY OF CHICAGO

OF THE

UNIVERSITY OF CHICAGO

OF THE

UNIVERSITY OF CHICAGO



TO the RIGHT W O R S H I P F U L
A N D

His most Worthy FRIEND,
B O N H A M N O R T O N, Esq;

Worthy Sir,

Knowledge, which is the divine
mother of certain Goodness, ne-
ver came unwelcome to a know-
ing Judgment; no more, I hope,
shall this my labour to your worthy Self, since
doubtless you shall find in it many things
necessary, and nothing which hath not in it
some particular touch of profit: It is a work
your former encouragements to my other la-
bours did create in me, and the wants you
worthily found, I hope shall bring you sup-
plies

plies both wholesome and becomming. The experience, I assure your goodness, was the expence of a bitter and tedious Winter; but the contentment (in gaining my wish) made it more pleasant then all the three other Seasons. What ever it be, it comes to you full of love, full of service. And since I know Virtue measureth all things by its own goodness; it is enough to me, that I know you are that Virtue. In you is power to judge, in you is Authority to exercise Mercy; let them both flye from your goodness with that mildness, that in them my hopes may be crowned, and my self rest ever at your service.

GERVASE MARKHAM.



The Preface to the Reader.

Shewing the use, profit, and truth of the Work.

THe use and application of this *Work*, (gentle Reader) is to reduce the *Hard, Barren, and Sterile Grounds*, such as were never fruitfull, or such as have been fruitfull, and are made barren by ill Husbandry, to be generally as fruitfull as any ground whatsoever; from whence shall ensue these general profits.

First, Plenty of Corn and Pulse; because all grounds being made able and apt for Tillage, the Kingdome may afford to sowe for one bushell that is now, hereafter five hundred, so mighty great are the unfruitfull waists of Heaths, Downes, Moors, and such like, which at this day lye unprofitable; and to this abundance of Corn will arise an equall abundance of Grass and Pasture: for as the best ground of the worst is to be converted to Pasture, and the worst to Tillage; so that worst being tilled and drest, when it hath done bearing of Corn, (which will be in six or seven years) shall for as many years more bear as good Pasture either for breeding or feeding as can be required, and then being newly drest again, shall newly flourish in its first profit.

Secondly, whereas in fruitfull places, the third or fourth part of all arable ground is lost in the fallow or tilth ground, now in these barren grounds, you shall keep no fallow field at all, but all shall bear either Corn or Grass; that fallow part serving to pay for the charge bestowed on it, and the rest.

Lastly, whereas in fertile grounds you cannot have either Wheat, Barley, or Rye, under two, three, four, five, and
six:

To the Reader.

six severall plowings, as fallowing in January and February, Stirring in April and May, Soiling in July and August, Winter-ridging in October and November, and Sowing, with other Ardors; now in these hard grounds restored, you shall not plow above twice at the most, to the saving of the Husbandmans pains, his Cattels travell, and a larger limitation of time for other necessary businesses.

For the truth of the Work, he that will ride into the barren parts of Devonshire or Cornwall, into the Mountainous parts of Wales, into the hard parts of Middlesex, or Darbyshire, or into the cold parts of Northumberland, Cumberland, Westmerland, Lancashire, or Cheshire; shall find, where industry is used, a full satisfaction for all that is here written.

Farewell.

Thine, G. M.



MARKHAM

HIS Farewel to Husbandry.

CHAP. I.

The Nature of Grounds in general; But particularly of the barren and sterill earth.

TO come to the full effect of my purpose, without any preambulation, or satisfaction to the curious, (for to the honestly vertuous are all mine endeavours directed) you shall understand that it is meet, that every Husbandman be skilful in the true knowledge of the nature of grounds; as, which is fruitful, which not: of which in my first Books I have written sufficiently; nor do I in this Book intend to write any tittle that is in them contained; for as I love not *Tautology*, so I deadly hate to wrong my friend.

Grounds, then, as I have formerly written in my first books, being simple or compounded; as simple Clays, Sands, or Gravels together, may be all good, and all fit to bring forth increase; or all evil and barren, and unfit for profit: for every Earth, whether it be simple or compound, whether of it self or of double mixture, doth participate wholly with the Climate wherein it lyeth; and as that is more hot, or more cold, more moist or more dry, so is the earth ever more or less fruitful. Yet for the better understanding of the plain
Coun-

Country-man, you shall know that both the fruitful and unfruitful Grounds have their several faces and characters, whereby they be as well known, as by the clime or situation of the continent; for that ground, which, though it bear not any extraordinary abundance of grass, yet will load it self with strong and lusty weeds, as Hemlocks, Docks, Mallows, Nettles, Kettleck, and such like, is undoubtedly a most rich and fruitful ground for any grain whatsoever. And also, that ground which beareth Reeds, Rushes, Clover, Daisie, and such like, is ever fruitful in Grass and Herbage, so that small cost, and less labour in such grounds, will ever make good the profit of the Husbandman: But with these rich grounds, at this time I have nothing to do.

To come down then to the barren and unwholesome Grounds, you shall understand that they are to be known three several wayes: first, by the Clime and Continent wherein they lye; next, by their constitution and condition; and lastly, by outward faces and characters. By the Clime and Continent, as when the ground lyes far remote from the Sun, or when it lyes mountainous and high, stony and rocky, or so neer unto the Skirts and borders of the Sea, that the continual Foggs, Storms, Mists, and ill Vapours arising from thence do poyson and starve the earth: all which are most apparent signs of barrenness. By the Constitution and Condition, as when the ground is either too extreemly cold and moist, or else too violently hot and dry; either of which produceth much hardness to bring forth, and sheweth the earth, so lying to be good for little or no profit. By the outward faces and Characters, as when you see (instead of Grass, which would be green, flowry, and thick growing) a pale thin mossie substance cover the earth, as most commonly is upon all high Plains, Heaths, Downs, and such like; or when you see the ground covered with Heath, Ling, Broom, Braken, Gorse, or such like, they be most apparent signs of infinite great barrenness, as may be seen in many Mores, Forrests, and other wild and woody places. And of these unfertile places, you shall understand, that it is the clay ground, which for the most part brings forth the Moss, the Broom, the Gorse, and such like; the sand, which bringeth forth Brakes, Ling, Heath, and

and the mixt earth, which utters Whinnes, bryars, and a world of such like unnatural and bastardy issacs.

Thus having a true knowledge of the Nature and Condition of your ground, you shall then proceed to the ordering, earing, and dressing of the same, whereby it may not only be purged and cleansed from those faults which hindred the increase thereof, but also so much bettered and refined, that the best ground may not boast of more ample increase, nor your more fruitfull placed Neighbours exceed you in any thing, more then in a little ease.

CHAP. I I.

Of the Ordering, Tilling, and Dressing of all sorts of plain barren Clayes, whether they be simple or compound.

THOU whom it hath pleased God to place upon a barren and hard soil, whose bread must evermore be ground with sweat and labour, that maist nobly and victoriously boast the conquest of the earth, having conquered Nature by altering Nature, and yet made nature better than shee was before : thou I say that taketh this honest delight in goodness, hearken unto these following Precepts.

As soon as thou hast well pondered and considered the nature of thy ground, & dost find that it is altogether barren & unfruitful, the clyme and condition not suffering it to bring forth any thing of worth or profit, and that thou hast well weighed what manner of earth it is, as that namely, it is either a simple Clay, or a Clay so mixt with other earths, that yet notwithstanding the Clay is still most predominant; thou shalt then select or chuse out of this earth so much as to thy self shall seem convenient, it being answerable to the strength of thy Team, and the ability of thy purse and labour to compass; and this earth so chosen out, thou shalt about the beginning of May, in a fair season break up with a strong Plough, such as is generally used in all strong Clay grounds, the Share being rather long then broad, and the Coulter rather somewhat bending then streight and caven according as the nature of the ground shall require,

The first earing of barren Grounds.

which every simple Plough-man will soon find out in turning up two or three furrows ; for according to the cutting of the earth, so must the Husbandman fashion the temper of his Plough.

The manner
of Ploughing.

Now for the manner of plowing this bad and barren earth, if the ground lye free from water (which commonly all evil barren earths do) you shall then throw down your Furrows flat, and betwixt every Furrow you shall leave a baulke of earth half as broad as the Furrow, and so go over, and plow your whole earth up, without making any difference or distinction of lands : but if you fear any annoyance of Water, then you shall lay your Furrows more high, near, and close together, dividing the grounds into severall lands, and proportioning every land to lye the highest in the midst, so that the water may have a descent or passage on either side.

Hacking of
Ground.

Now so soon as you have thus plowed up your land, and turned all the swarth inward unto the earth, you shall then take Hacks of Iron, well steeled, and reasonable sharp, such a competent number, as your purse or power can compass, or the greatness of your ground requireth: for you shall understand, that one good hacker, being a lusty labourer, will at good ease hack or cut more then half an acre of ground in a day ; and with these hacks you shall hew and cut to pieces all the earth formerly plowed up furrow by furrow ; and not the furrows onely, but also each severall baulke that was left between, and any other green swarth whatsoever the plough had escaped, and it shall be cut into as small pieces as conveniently as you can ; for thereby is your mould made much more mellow and plentiful, and your Seed at such time as it is to be cast into the earth, a great deal the better and safer covered, and much more sooner made to sprout and bring forth increase. Now for the shape and fashion of these Hacks, you shall behold it in this figure.



Sanding of
Ground.

When you have thus hacked all your ground, and broke in pieces all hard crusts and roughness of the swarth, you shall then immediately, with all the convenient speed you can (because time is very precious in these labours) if you be near unto any part of the Sea-coast, or to any other Creek or River, where the salt-water hath a continual recourse, thence fetch (either on Horse-back, or in Cart, or other Tumbril, such as the nature of the Country, or your own ease can afford) great store of the salt sand, and with it cover your ground which hath been formerly plowed and hackt, allowing unto every acre of ground, three-score or fourscore full bushels of sand, which is a very good and competent proportion; and this sand thus laid, shall be very well spread and mixed among the other hackt and broken earth. And herein is to be noted, that not any other sand but the salt is good or available for this purpose, because it is the brine and saltness of the same which breedeth this fertillity and fruitfulness in the earth, choaking the growth of all weeds, and bad things which would sprout from the earth, and giving strength, vigour, and comfort to all kind of grain, or pulse, or any fruit of better nature.

Liming of
Ground.

When you have thus sanded your earth, you shall then if you have any Limestones about your grounds (as barren earths are seldome without) or if you have any quarries of stone (which are seldome unaccompanied with Lime-stone) gather such Lime-stone together, and make a Kiln in the most convenient place you have, as well for the carriage of the Lime, as for the gathering together of the stone, and having burnt your Lime, the manner whereof is so generally well known through the whole Kingdome, that in this place it needeth little or no repetition, you shall then on every Acre so formerly plowed, hackt, and sanded, bestow at least forty or else fifty bushels of Lime, spreading and

mixing it exceedingly well with the other sand and earth; and herein is to be noted, that the stronger and sharper the Lime is, the better the earth will be made thereby, and the greater encrease and profit will issue from the same: neither shall you need to respect the colour and complexion of the Lime, as whether it be purely white (as that which is made from Chalke) or gray (as that which is made from the small Lime-stone) or else blackish brown (as that which is made from the great stone and main Quarry) since it is the strength and goodness of the Lime, not the beauty and colour, which brings forth the profits.

Manuring of
Ground.

Now that this Lime is of excellent use, and wonderful profit, do but behold almost all the Countries of the Kingdome where there is any barrenness, and you shall find and see how frequently Lime is used, insomuch, that of mine own knowledge in some Countries, where (in times past) there was one Bushel made or used, there is now many loads, and all risen from the profitable experience which men have found in the same.

Now, when you have thus Limed your ground, you shall then take of the best manure you have, as Oxe, Cow, or Horse-dung, Straw rotted either by the littering of beasts, or by casting upon high-ways, the mud of Lakes, Ponds or Ditches; the soyle of young Cattel made in the Winter time by feeding at stand, Heake, or any such like kind of Ordure; and this manure or compost you shall carry forth either on Horse-back, or in Carts or Tumbrils (according as the Country will afford) and you shall lay it and spread it upon your ground so formerly plowed, Hackt, Sanded, and Limed in very plentiful manner, so far forth as your provision will extend; for it is to be understood, that barren and hard earths can never be overladed with good manure or compost, since it is onely the want of warmth and fatness, which manure breedeth and causeth all manner of fruitfulness.

Times for all
labours.

After you have thus manured all your ground, it is to be supposed that the season of the year will be shot on, for the labour of sunding will take little less than two months, your ground being of an indifferent great quantity, except you have assistance and help of many of your friends, which is a courtesie that

that every Husbandman may embrace, but not trust unto; for I would not wish any man that hath not Tenants to command, to presume on other friends, lest they fail him, and so his work lye half done, and half undone, which is a great Character of negligence and improvidence: but let every one proportion their labours according to their own strengths, and the number of their ordinary families. The Liming of your ground will take at least half so much time as the sanding, and the Manuring rather more than less than the Liming; so that by any reasonable computation of time, beginning to plow your ground at the beginning of *May*, ere it be Hackt, Sanded, Limed, and Manured, *Michaëlmus* will be come, which is the end of *September*; for I allow the month of *May* to plowing and hacking, *June* and *July* for Sanding; *August* for Liming; & *September* for Manuring. So then to proceed on with our labour, at *Michaëlmus*, or from that time to the end of *October*, you shall begin to plow over that ground again which formerly you had Plowed, Hackt, Sanded, Limed and Manured; and at this latter plowing you shall plow the ground somewhat deeper then you did before; and taking a good fitch (as they call it in Husbandry) you shall be sure to raise up the quick earth, which had not been stirred up with the Plough before, making your furrows greater and deeper than formerly they were, and laying them closer and rounder together then they were before; and in this order or latter caring, you shall be careful to Plough your Ground as clean as you can without balks, or other escapes in husbandry, and as you thus plow your ground, you shall have certain Hackers, with their Hacks to follow the Plough, and to cut the earth and furrows into very small peeces, as was formerly shewed in the hacking and cutting of the first arder; then so soon as your ground is thus ploughed and hackt; you shall take a paire or two of very strong and good Iron harrows, and with them you shall go over your ground, tearing that which was formerly ploughed and hackt into more small peeces than before. and raising up the mould in much greater abundance than was formerly seen: which work once finished, you shall then take your Seed which would be the finest, cleanest, and best Wheat you can provide, and after the manner of good Husbandry,

Second Plowing.

Second hacking.

First Harrowing.

Of sowing the
seed.

bandry, you shall sow it on the ground very plentifully, not starving the ground for want of Seed (which were a tyrannous penury) nor yet choaking it with too much (which is as lavish a foolery) but giving it the full due, leave it to the Earth and Gods blessing.

The second
Harrowing.

Now so soon as you have thus sown your seed, forthwith you shall take all the harrows again, harrowing the seed into the earth, and covering it close and well with all care and diligence: and in this latter harrowing, you shall have great respect to break every clot as much as you can, and so stir up and make as much mould as you can, and the finer such mould is made, the better it is, so it cover deep and close, for you shall understand, that all these kinds of barren Clayes are naturally tough, cold, and binding, whereby they stifle and choak any thing that growes within them; for the natural toughness of the earth will not give any thing leave to sprout, or if it do sprout, the binding nature thereof so fetters and locks it within the mould, that it cannot issue out; or if it do (with extreme struggling) rise through the pores of the same, yet doth the cold presently starve the root, and make the stemme utterly unable to bring forth fruit, or any profit at all, so that if the toughness be not converted to a gentle looseness, and easie dividing of it self, the coldness unto warmth, and the hard binding unto a soft liberty, there can be small hope of commodity, which this manner of dressing the earth bringeth to pass; for the mixture of the sand takes away the toughness, the Lime brings heat, and the manure comfort and liberty: As for the hacking and cutting the earth, that is, to make all the rest symbolize and mix together; for as if any by a Dispensatory make a Medicine, and cast his ingredients confusedly one upon another, without care of mixture, melting, or dissolution, shall find but a corrupt, disorderly, and ill compounded receipt; so he that dresseth and manureth his ground, and doth not by hacking, plowing, or some other Husbandry course mix the earth, and the compost perfectly well together, shall seldome find profit from his seed, or find any man of wit desirous to become his imitator. Now I must confess, that some easie grounds of light and temperate nature, will mix very well and sufficiently by the help of the Plough

Faults in the
Earth.

Only;

only; but this barren hard earth of which I now write, must onely be broken by this violent and extreme labour, or else there will neither be mould, earth, or any converture for the Seed, but only foul, great, and disorderly clots and lumps, through which the grain can never pass, and that which lyeth uncovered will be made a prey to fowl, and other vermine, which will hourly destroy it.

After you have sown and harrowed the ground, you shall then see if there remain any clots or hard lumps of earth unbroken, which the teeth of the harrow are not able to tear in pieces (as it is very likely you shall perceive many) for these hard barren earths which are plowed up in their green swarths, are nothing neer so easily broken and brought to mould, as are the mellow soft earths which have been formerly plowed many times before, because the hard and intricate roots of the Grass, Moss, and other quick substances growing upon the same doth bind and hold the mould so close and fast together, besides the natural strength and hardness of the earth, that without much industry and painful labour, it is impossible to bring it to that fineness of mould which Art and good Husbandry requireth; therefore as soon as you behold those clots and lumps to lye undissolved, and unbroken, you shall forthwith take good strong clotting beetles, or mauls made of hard, and very sound wood, according to the proportion of this figure,

Of clotting
the Earth.

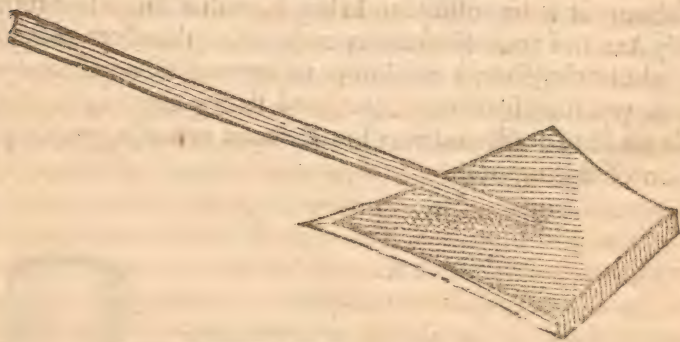


And with these mauls or clotting beetles, you shall break all the hard clots and lumps of earth in pieces, even to so small dust as possibly you can, because you are to presuppose that these clots thus hard, tough, and unwilling to be with any me and digested into

into mould, are either not at all, or else very insufficiently mixed with the Sand, Lime, and other manures: and therefore you must rather break them that thereby they may mixe, and give easie passage to the Grain, and not like heavy poysses and dead lumps lye and press down the Seed so that it cannot sprout.

Another manner of Clotting.

But if it so fall out, partly by the hardnesse of the ill earth, partly through the season and dryness of the year, that these clot and lumps of earth will either not be broken at all, or at least so insufficiently that the mould will not be any thing near so fine as you would have it: you shall then, having done your best endeavour, let your ground rest till there have fallen a good round shower or two of rain: which may wet the clots through and through; and then the next fair blast you shall take your clotting beetles, but not those which you took before in the dry season, but some much lighter, broader and flatter, being made of thick Ash-boards more than a foot square, and above two inches in thickness, according to this figure.



And with these flat Maules and Beetles, you shall break all the unbroken clots and lumps of earth which shall trouble or annoy your ground, making your Lands as plain and smooth as is possible, so that the grain may have easie passage forth; which labour as soon as you have finished, you shall then refer the increase and prosperity thereof unto the mercies of God, who no doubt will give his blessing according to thy labour and thankfulness.

As touching the trimming and weeding of this Corn, after Of Weeding it is sprung a foot above the earth, or thereabout, you shall understand, that these hard barren grounds are very seldom troubled with weeds; for weeds, especially great, strong, and offensive weeds, are the issues of rich and fertile soils; yet, if through the trimming and making of this earth (which is not commonly seen) you do perceive any store of thistles or other grosser weeds to spring up, you shall then in the month of May, with hooks, nippers, and such like tools, cut them away, or pull them up by the rootes, which indeed is the better manner of weeding.

Now here is to be understood, that your ground being thus dressed and trimmed as is before shewed, you may very well for the two first years sow Wheat or Rye upon it, but Wheat is the greater profit and more certain seed; the third year bestowing but your fold of Sheep upon it, that is, manuring it with your Sheep, (for it is to be intended, that in these barren earths Sheep are the greatest stock of which the Husbandman can boast) you may very well sow it with Barley, and have a fruitfull & plentiful crop thereon; the next three years, you may sow it with Oats; and the seventh year you may sow it with small white Garden Pease or Beans, according as you shall find the strength and goodness of the ground, (for Beans desire somewhat a richer soyl than the Pease;) then for three or four years following the seven, you may let it lye at rest for grass, and doubtless it will yield you either as good pasture, or as good Meadow as you can reasonably require. And then after the expence of this time, it shall be good that you dress and order your ground again in such sort as was formerly declared; and thus you may every year dress one or other piece of ground, till you have gone all over all your ground, or at least as much as you shall think expedient; and without faile, he that is Master of the most fruitfullest and richest soyl, shall not boast of any greater increase then you shall, only your charge may be a little more, and so shall be also your commodity, which shall make an amends for you charge: as for your toyles, yours shall be much the less, by a just computation; for though you have many labours, yet they are but Summer labours, and neither hurt your own body, nor your

Cattel; whereas the Master of the rich soyl is in continuall work both Winter and Summer, labouring twice so much to confound the superfluous growth of Weeds, as you do to beget the increase of Corn, and whereas he must ever keep a third or fourth part of his Corn ground without fruit, you shall not keep any which shall not yield you a sufficient Commodity.

Objection.

Now me-thinks I hear in this place to be objected unto me, that whereas I do prescribe the sanding of these barren earths with the salt Sea-sand and no other, (as it is true, for all other fresh sand is unavailab) what if the ground do lye so far within the Land, that there is no salt sand within many score miles of it, how then shall I make good my barren earth? sure to fetch sand so far will never equal the cost; or it may be this experience hath no further limits then to such hard and barren earths as lye alongst the Sea coast only.

Answer.

To this I answer, that albeit this salt Sea-sand be of infinite good and necessary use, inriching grounds wonderfully much, yet is not this experience of bettering of barren soiles so strictly bound thereunto, but that without any use of the same, you may make your earth as fruitful in Corn or Grass, as hath been already formerly declared.

**Ordering
Earth where
Sands wanteth.**

Therefore if your ground lye much within the Land, and far from the Sea, so that this Commodity of sand is not by any possible means to be gotten; then you shall (having first lookt into the Nature of your ground, and finding it to be by all characters and faces a cold, barren, stiff, dry Clay, yielding nothing but a short mossie Grass, without any other burthen at all, as is seen upon most Plains, and Downs of this Kingdom) first plow it, and hack it, as was before shewed in the former part of this Chapter, then instead of sanding it, you shall lime it as aforesaid, or rather a little more plentifully, then you shall manure it, after (as at seed time) you shall plow it and hack it again, then harrow it as before said; then to every Acre of ground you shall take two bushels of very dry bay-salt, and in such manner as you sow your wheat, you shall sow this salt upon the ground; then immediately after the sowing of the salt, you shall sow your Wheat, which Wheat would be thus prepared before you sow it; the day before you are to sow your grain, you

**Sowing of
salt.**

shall

shall take bay salt and water, and mixing them together make a brine so strong that it will bear an Egge, then put the Wheat you are to sow into that brine, and let it steep therein till the next day, then drain it as clean as may be from the brine, and so sow, harrow it, clod it, and weed it, as was before declared, and no doubt but you shall find a marvellous great increase thereby; for this I can assure you, both from a most certain knowledge, and a most worthy Relation, that a Gentleman buying some store of S. ed-wheat; and infortt to bring it home by Sea, by some casual means, some of the Sacks at the unlading, fell into the Sea, and were much drencht in the salt-water, whereat the Gentleman being grieved (as doubting some hurt to come to the seed) yet infortt of necessity to make use thereof, caused all the Wheat which was so wet to be sown by its self in a particular place, and upon the worst ground which he had, (as much despairing in the increase thereof) and it is most infallibly true, that of that wet seed, he received at least five fold more profit then of any other; and from thence it came, that this experiment of Brine and the sowing of salt hath taken place; from which the painful Husbandman hath found such infinite increase to arise, that the use thereof will never be laid down in this Kingdome. Neither is the thing it self without good and strong probability of much increase and strength for the bettering of all manner of arable grounds; for there is nothing which killeth weeds, quicks, and other offences of the ground so much as saltness: for what makes your Pidgeons dung & your Pullens dung to be better for arable grounds, then any other dung, or manure whatsoever, but by reason of the saltness thereof; by which saltness also, you may judge the strength and heat thereof, in so much that the proper taste of fire, or any hot thing is ever salt; also we say in Philosophy, that blood which carryeth the vital heat and warmth of the body is in taste salt, and so a nourisher, maintainer, and increaser of all the strength and vigour of the inward faculties; whereas Flegm, Choler, and Melancholly, which are the hurts, and confounders of the vital spirits, the first is in taste sweet, the second bitter, and the last of an earthly and dry taste, full of much loathsomeness.

The Excellency of Salt.

Now again, you shall understand, that as you thus wet or Of steeping
steep seed in brine.

steep your Wheat seed, so you may also steep any other Seed ; as barley, oats, beans, pease, lupins, Fetches, and such like ; of which your beans, pease, and lupins, you may steep more than any of the rest, and your Oats the least.

As touching Rye, it shall be good not to steep it at all, for it is a great enemy to all manner of wet and moysture, inso-much, that the curious Husbandman will forbear to sow it in any showre of rain, bearing in his mind this ancient adage, or saying, that *Rye will drown in the Hopper* ; as on the contrary part, *Wheat would be sown so moist that it might stick to the Hopper* : Yet notwithstanding, when you do sow Rye in any of these In-lands, and cold barren Countries, where sand is not to be gotten, you shall not by any means omit the sowing of your salt before ; for it is nothing neer so moist as it is warm and comfortable.

CHAP. III.

Of the ordering, Tilling, and dressing of all rough Barren Clayes, whether simple or compound, being laden and over-run with Gorse, Broom, and such like.

NEXT unto these plain barren earths, which by reason of their heights, are subject in the Winter time to all manner of cold, froasts, stormes, tempests, blasts, and winds, which are the perfect hinderers of all encrease and growth ; and in the Summer time to all hot scorching, scaldings, and fiery reflections of the Sunne, which on the contrary part, burneth and withereth away that little seeming increase which appeareth above the earth ; I will place that barren clay whether it be mixt or unmixt, which lying not so high, and being subject unto those hurts and offences, seemeth to be a little more fruitfull, yet either by the extreame cold moisture thereof, or the stony hardness and other malignant qualities, is no less barren than that of which I have formerly written, which indeed is that barren and vile soyle, which will neither bear corn nor grass, but is onely over-run and quite covered
over

over with great, thick, and tall bushes of Gorse or Furres, which is most sharp, woody, and gross weed, so full of pricks, that neither Horse, Beast, Sheep, nor Goats, dare thrust their noses to the ground to gather up that little poor grass, which groweth thereon. And albeit these Gorse or Furs are one way a little commodity to the needfull Husbandman, in being a reasonable good fuel, either for baking, brewing, or divers other sudden and necessary uses; yet in as much as the profit being compared with the great quantity of earth which they cover and destroy, and which with good Husbandry might be brought to great fruitfulness, it is indeed no profit at all; it shall not be amiss for every good Husbandman that is pester'd and over-laden with such ground, to seek by way of good Husbandry how to reduce and bring it to that perfection and excellency which may be best for his own particular commodity, and general good of the Kingdome wherein he liveth.

Then there is another kind of soile which is nothing at all differing from this, but is every way as barren and sterile, (which is as noysome a weed as the former) and though it have not such sharp prickles as the other, whereby to hinder the grazing of Cattel, yet doth it grow so close and thick together, and is naturally so poisonous and offensive to grass, that you shall seldome see any grow where this Broom prospereth; besides, the bitterness thereof is so unpleasant and distastfull to all kind of Cattel, that not any will ever crop or bite upon the same, only it is of some necessary use for the poor Husbandman, in respect that it serveth him both for fuell, for thatching and the covering of his houses, (being for that purpose, of all, the longest lasting) and also for the making of Beesoms for cleansing of the house and barnes, or else for sale and commodity in the Market; all which profits (as before I said) being compared with the loss of the ground, and the goodness that might be reaped from the same, are indeed truly no profits but hindrances.

Therefore I would wish every man that is Master of such grounds, whether they be over-run with Gorse, Furres, Broom, or any such kind of gross, woody, or substantial weed, first to cut

Destroying of Weeds. up the weed (of what sort soever it be, whether Gorse, Furs or Broom) as close and neer to the ground as you can possibly , and then making them up in sheafs or bigge faggots , carry them home, and stack them up very dry, so as no rain may enter or pierce into them, for the smallest wet will rot and consume them to dirt and filthiness ; which done, you shall make Labourers with hacks , picks and such like tools, to stub up all the roots which you left in the ground, even to the very bottom of the same ; and these roots you shall be very careful to have stubbed up exceeding clean , by no means leaving (so near as you can) any part or parcell of the roots behind you ; then these roots thus stubbed up, you shall diligently gather together into little heaps, as bigge as Moal-hills, and place them upon the ground a pretty distance one from another, and so let them lye till the Sun and Wind have dried them : for it is intended, that this labour must begin about the latter end of *April*, and beginning of *May*.

Burning of
Bait.

Then so soon as you find these roots are thorowly dried, you shall pile them handsomely together, laying them a little hollow one from another, and then with a hack cut up some of the same earth , and therewithall cover all the roots quite over, only leaving a vent hole at the top, and on one side , and so let the hills rest two or three dayes, till the earth be a little parcht, and dried, then take fire and some other light dry fuel which is aptest to blaze, and with the same kindle every hill, not leaving them till you see them perfectly on fire ; which done, let them burn both day and night, till the substance being wholly consumed, the fire go out of it own self, and this in some Countries is called the *Burning of Bait*.

Breaking of
the burnt
Earth.

Now as soon as the fire hath been extinguished for two or three dayes, you shall then come, and with shovels & beetles to break the hard burnt earth in pieces) you shall spread all the ashes clean over the ground ; which done, you shall with a very long plough tear up the earth into great and deep furrows, and divide it into Lands, as you shall think meet and convenient , laying them higher, and flatter, as you shall have occasion, and as the ground lyeth more or less within the danger of water , whether it be the over-flowing of some neer Neighbouring Brooks,

Brooks, or Rivers, or else other standing water occasioned by Rain and extraordinary Showres, which must be carefully lookt unto; because all over-flows and inundations of water is a mighty destroyer and consumer of grain; but these barren grounds of which I now write, are very seldome oppress'd with water; for most commonly they lye so high, that the continuall dryness thereof is a strong occasion of the much unfruitfulness. After you have thus burnt your bait, and plowed up your ground, you shall then with your hacks hack it into small pieces, in such manner as was declared in the former Chapter; then you shall (if the Sea be any thing near you) sand it with salt sand (as before said) then lime it, and after, manure it either with Ox-dung, Horse-dung, rotten Straw, mudd of Ponds and Ditches, the spitling of House-floores, or sweeping of Channels and Streets, or such like; or for want of all these, in case you dwell neerer unto the Sea-coast (where manure for the most part is in greatest scarcity, and the hardest to come by) you shall gather from the bottom of the rocks (where the seyde of the Sea continually beareth) a certain black weed, which they call Hemp-weed, having great broad leaves, and growing in great abundance, in thick tufts. and hanging together like pease-straw; and with these weeds you shall cover your lands all over of a pretty good thickness, and then forthwith you shall plow it again somewhat deeper, and with somewhat greater furrows then before, raising up the new quick earth to intermingle, and mix with those manures and helps which thou hast formerly prepared and laid upon the ground; then you shall again hack it, and harrow it; then you shall take Pigeons dung, or Pullens dung (that is, any kind of land fowl whatsoever, but by no means any water fowl) or Pigeons dung and Pullens dung mixt together, and allowing to every acre two or three bushels thereof, which is the true quantity of seed proportioned for the same, and this dung being broken and masht into small pieces, you shall put into your Sylop or Hopper, and in the same manner as you sow your corn, you shall sow this dung upon the ground, and then immediately after it you shall sow your Wheat, either steeped in brine, or else salt Sea-water, or unsteeped as you shall think good; but in case you can neither get salt sand.

Causes of unfruitfulness.

An Excellent Manure.

Of Plowing.

Of divers Manures.

Mixture of
Manures.

sand nor Sea Rock-weeds, then you shall by no means omit the steeping of your Seed; neither shall you fail before you sow your Seed, to mix with your pigeons and pullets dung, a full equal part of Bay-salt well dried and broke, and so sown with the dung upon the land, and then the seed after it; which done, you shall harrow it again, clot it, sleight it, and smooth it, in such sort as was formerly declared in the former Chapter, for these labours have no alterations, but must in all points be done as was before set down.

Of weeding.

Now touching the weeding of this earth, after the Corn beginneth to grow about the ground, there is no fear to be had either of Thistles, Tares, Cockles, Darnel, Docks, and such like strong weeds, which indeed are the issues of good grounds ill ordered and handled; but the weeds which you shall most fear in this place, is young Gorse, or Furrs, or else young Broom, which are very apt to grow from the least part or parcell of roots that shall be left behind; Nay, the very nature of those barren earths is such, that of its own accord it will bring forth those weeds: the cold sharpness of the air mixing with the sterility & roughness of the earth, being the cause that it will give life to no other better plants; therefore so soon as you shall behold any of them to appear above the earth, though they be not half a finger high, you shall presently with all diligence pull them up by the roots, and cast them away, or lay them in heaps that they may be afterwards burnt, and the ashes sprinkled upon the ground: And herein is to be observed, that the younger and the sooner that you do pull up these weeds, the better it is, and the easier they will come from the earth, and the sooner be destroyed: for all those mixtures wherewith already you have been taught to mix your earth, are in themselves such naturall enemies to all these kind of barren weeds, that should you omit the manual labour of destroying them (which no good Husband willingly will do) yet in time the earth of it self, and the often plowing of the same would leave no such offence of weeds, or other growths which might hinder the corn.

Time for
Weeding.

Now touching the best time when to pull away these weeds, though generally it must be done as soon as they do appear above the ground; yet it shall not be amiss for you to defer the work

work till after a showre of rain, and then immediately after the ground is wet, and so by that means more apt and willing to open and forsake the root fastned within it) you shall with all diligence pull them out of the ground, and destroy them: neither shall you pull them out of the ground with your hands only; for the Gorse have exceeding sharp pricks, so that with your naked hands you are not able to touch them, and to arm your hands against them, with strong clock gloves, would be too boisterous and combersome, so that sometimes you might either miss the weeds, and pull up the corn, or else pull up the corn and weeds both together; therefore to prevent all these casualties or hinderances, you shall take a pair of long small wooden Nippers, made after the form of this figure.



And with these you shall pull the weeds out of the ground, and cast them into the furrows by the sides of the Land, till your dayes work be finished, and then with a rake you shall rake them together, and so lay them in heaps to dry and wither, in more convenient places; that when time shall serve, you may burn them, and use them, as was before declared.

Lastly, you shall have great respect, that if this ground be very much troubled with loose stones, as flint, pibble, and such like, that then you very carfeully get them gathered from the ground, both before and after you have plowed it, and to lay them on heaps in other vacant places, where they may serve for pavings, and such like purposes when time requireth: but if the ground be over-run with great, or else small Limestones, as for the most part these barren grounds are; then shall you with all care gather them up, and lay them in great heaps in some corner of your field, where you may make a convenient Lime kiln, and so there burn these stones thus gathered, which will be

Gathering of
stones.

both an infinite profit, and an infinite ease to the rest of your labours.

CHAP. IV.

Of the ordering, Tilling, and Dressing of all rough barren Clayes, whether simple or compound, that are over-run with Whinnes, or such like.

NExt unto this barren Clay, which is over-run with Furse, Broom, and such like, I will place that barren and unfer- tile earth, being also a Clay, whether simple or compound, which is over-run onely with Whinns, and indeed bearing little or no other burthen, or if it do bear any other burthen as some little short mossie grasse, yet is that grasse so covered over with these sharp Whinns, that not any beast dare put his nose to the ground, or bite upon the same; and indeed this kind of earth is not any whit at all less barren than those of which I have already written, but rather more, in that the malignant qualities thereof are not so soon corrected, nor yet the vertues so soon restored.

What whinnes
are.

Whinnes are a certain kind of rough dry weeds, which grow bushie and thick together, very short and close unto the ground, being of a dark brown colour, and of crooked growth, thick and confused, and full of knots, and those knots armed with hard, long sharp pricks like thorns or bryars, they have little brown leaves which shadow the pricks, and do wind their branches so one into another, that they can hardly be separated, yet is not their growth at any time little more than a handfull above the earth, only they spread exceedingly, and will run and cover over a whole field, choaking up all sorts of good plants whatsoever, and turning the best grasse that is, to moss and filthiness: wherefore if at any time you be Master of any such naughty and barren ground, and would have it reduced unto goodness and fertility, you shall first take a fine thinn paring shovel made of the best Iron, and well steeled, and hardoned round about the edges, according to the form of this figure following.

And



And with this paring-shovel, you shall first pare up all the upper swarth of the ground, above two inches, or an inch and a half thick at the least, and every paring would be some three foot in length at the least, and so broad as the shovel will conveniently give it leave, and this swarth thus pared up, you shall first turn the Whinny or Grass-side downward, and the earth side upward and so let it lye two or three dayes in the Sun to dry (for this work is intended to begin in the month of *May*) and when that side is well dried, you shall turn the other side, and dry it also, then when all the swarth is dried, you shall gather six or seven peeces together, and turning the Whinny or Grass side inward and the earth side outward, you shall make round hollow little hills thereof, much according to the fashion of this Figure following.



And the inward hollownes like unto the hollownes of an Oven, but much less in compass ; which done, you shall fill the hollownes with dry chips, or small sticks, or Furse and Straw

mixed together, which you shall put in at the vent-hole which shall be left on one side of the hill, and kindling it with fire, you shall burn all that swarth in such sort as you burnt the roots of your Furse and Broom before; for this is also called a burning of bait, as well as the former; for it is a most principal nourisher of the earth, and a very sudden destroyer of all malignant weeds whatsoever.

Breaking of
Baits.

After the burning of your hills, as soon as the fire is utterly quenched and gone out, and no heat at all left in the hills; you shall then with clotting beetles beat them all down to dust, and then with shovels you shall spread the ashes quite over all the ground, as was before declared in the former Chapter: and herein is to be noted, that you must place these hills as thick and close together as by any means possibly you can, making your hills so much the less and lower, that they may stand thicker and nearer together, and so cover more ground, and thereby the heat and strength of the fire to disperse it self over all that pece of ground; for the fire burning upon the earth, doth as much good for the enriching of the earth, and destroying of the weeds, as the ashes doth which are spread upon the same.

Mowing.

Now after your bait is in this manner burned and spread, you shall then (as before shewed) plough up your ground in good large furrows, then hack it very small, Sand it, Lime it, and manure it; and of all manures, there is not any better for this ground than Oxe-dung, and ashes well mixt together; of which ashes, those of bean-straw, Pease-straw, or any other straw are best; and those of Wood; or Fern next, and those of Sea-coal, or Pit-coal are the worst of all. Swines dung is not much amiss for this ground, for though it be a greater breeder of weeds and thistles in good and fertile grounds, yet in this cold, hard, and barren earth it worketh no such effect, but is a great comforter and warm moistner of the same.

After you have thus made your ground, as soon as Wheat seed-time cometh, which is the latter end of *September*, and beginning of *October*, you shall then with great care plow over your ground again, and take great respect that you turn up your furrows much deeper than before, and that for two special causes.

causes; the first, that the new earth may the better be mixt with the old earth, and those helps that are added thereunto; and secondly, that you may be sure to tear up the roots of all the Whinns from the very bottom of the earth, not suffering any part of them to remain behind, and for this purpose it shall not be amiss to have an idle boy or two to follow your plow, and to gather away all the roots that shall be torn up, or any way else left bare above ground, which roots shall be laid on heaps in convenient places, and then after burnt, and the ashes thereof spread upon the ground: which will be a very great comfort unto the seed, being a speedy help unto the sprouting thereof, and a very warm comforter of the root after the steame is spindled above ground, for in these cold barren earths nothing doth so much spoyl and slay corn, as the dead coldness which lyeth at the root thereof; for in many of these unfertill places, you shall see Corn at the first sowing (whilst there is a little strength in the ground) sprout in great abundance, promising much hope of the profit: but when it should spindle and come to much better perfection, that poor strength being spent and consumed, and the cold and dryness of the soyl, having as it were over-come all matter of comfort, then presently you shall see the blade of the Corn turn yellow, the stemm or stalk to wither, and either put forth no ear at all, or else a very poor little empty one, being laden with nothing but a most dry chaffie husk without substance. But to come again to our purpose, after you have thus plowed up your ground the second time, you shall then hack it again, and harrow it, as was declared in the former Chapters; then you shall take your seed-wheat which hath been steeped either in brine or Sea-water, and to every bushel of that seed you shall add a bushel of bay-salt, and mix them very well together in your Hopper or Sydlop, and so sowe them together upon the ground, observing to double your cast so oft, that you may not fail to cast that true quantity of seed into the earth, which otherwise you would have done, if so be there had been no mixture at all; for to do otherwise were to deceive the ground, and a handfull of seed so sowed would be the loss of a peck in the time of Harvest; therefore have great respect that your ground have his due; for it is no

more

more cost, though it be a little labour.

Harrowing.

When your seed is sown, you shall harrow it again the second time, clot, smooth it, and sleight it, as was before declared in the former Chapters.

Weeding.

As touching the weeding of this ground, it is the least labour of all other, for the earth being so corrected as is before shewed, it will naturally of it self put forth no weeds, especially if you remember to plough it deep, and be sure to tear up and gather away all the quick roots, otherwise if that labour be any thing neglected, then will it put forth both Whins and great store of other rough weeds, which as soon as you shall perceive to appear, you shall presently with your wooden nippers pull them up by the roots, as was at large declared in the foregoing Chapter.

Profits.

Now for the general profit of this ground thus made and prepared, it is the same that the two former are, that is to say, it will bear you good and sufficient Wheat, in plentiful abundance for the space of two or three years; then barley a year after; then Oats three years together after the barley; and pease or beans a year after the oats; then Lastly, very good Medow or Pasture for the space of three or four years after, and then you shall begin and dress it again, as was formerly declared.

CHAP. V.

Of the ordering, Tilling, and Dressing of all barren Clayes, whether simple or compound, which are over-run with Ling or Heath.

THere followeth now successively another sort of barren earth, which indeed is much more sterile and barren than any of the other formerly written upon; because they, out of their own nature, do bear a certain kind of grass or food which will relieve ordinary hard store-Cattel, whether it be Sheep, Goats, or young Beasts: But this earth, of which I am now to treat, beareth no grass at all, but only a vile filthy black brown weed, which we call Ling, or Heath, the tender tops whereof Cattel and wild Deer will sometimes crop, yet it is to them but little relief, and only maintaineth life and no more.

Now

Now albeit some may object unto me, that this kind of soyl is ever a sandy soyl, and no clay, as may be seen in most Chafes, Forrests, and Down; yet I answer, that albeit it hold so in general, yet there are divers clays, especially in mountainous Countreies, that are pestered with these kind of weeds, as may be seen in the North, and North-west part of *Devenshire*, in some parts of *Cornwall*, and in many parts both of North and South *Wales*; and these clay grounds which are thus offended with these weeds of Ling, or Heath, are much more barren and unfruitful than the Sands, because of their much more coldness; yet those clays which are mixed with either black Sand, dun Sand, or yellow Sand, and over-run thus with Heath or Ling, are the most barren of all. To make any further description of this Heath or Ling, being a thing so notoriously known over all this Kingdome, I hold it meerly needless, only to say it is a rough brown weed, shooting out abundance of stalkes from one root, with little dark leaves, and flowers on the top, of a pale reddish colour, much inclining unto Peach colour at the first; but being full blown, they are then a little more whitish.

You therefore that have any such ground, and desire to bring it to fruitfulness, and bearing of good Corn and Grasse in a reasonable abundance, you shall first with sythes or sharp hooks (but old sythes are the better) cut down all the Heath, or Ling, which groweth upon the earth you intend to convert to goodness, so neer the ground as possibly you can; then when it is cut down (which would ever be at the beginning of the Month of *May*) you shall let it lye upon the ground, daily tolling, and turning it till it become very dry, then spreading it all over the ground, and mixing or covering it with dry straw of any kind whatsoever, you shall presently set it on fire in so many several corners of the field, that all the several fires in the end may meet in one poynt, and not leave any part of the mowed Heath or Ling unburnt, or any part of the ground unscorched. After this is done, and the ground cooled, you shall with your flat clotting beetles beat the ashes hard into the ground, then you shall take a strong plow, with a broad winged share, and an even coulter, and you shall plow up all this ground thus burnt

in very large and deep furrowes, by no means picking ou any of the quick roots which shall remain in the furrows so turned up, but letting them rest in the earth still; then with your hacks, and the help of your Iron paring shovel, you shall cut up the furrows, formerly turned up, into short pieces of three foot, or three foot and a half long, and some less as occasion shall serve: then with these pieces, you shall build little hollow hills, such as in the former Chapter you made of the upper swarth of the ground only; and then filling the hollownes with dry heath, and dry straw mixt together, you shall set every hill on fire, and so burn the very substance of the earth into ashes, which will soon be done by reason of the infinite number of roots and small strings, which lye mixt in the earth, and the drynes thereof occasioned by the former burning: And this is another kind of burning of Baite, much differing from all the former, and yet to as great end and profit as any whatsoever; and these hills must, as the former, be placed one as near another as is possible, so as they may spread and cover over the greatest part of the ground, and leaving no more than a good reasonable path to pass between hill and hill.

Another burning of Baite.

Now as soon as you have burned all your Baite, and that your hills are cold, you shall then as was before shewed in the former Chapter, with beetles and shovels break down the hills, and spread the earth and ashes over all the ground; which done, you shall sand it (if the situation of the ground be answerable thereunto) and lime it in such sort as was shewed in the second Chapter; then when it is limed, and the lime equally spread, not more in one place than in another, you shall then manure it with the best manure you can provide, of which there is none better or more proper for the ground than mans ordure, and the rubbish, sweepings, parings, and spillings of houses mixt together: for want of this (because it may not be in so great plenty as other manures) you may take either old Oxedung, or Horse dung, or for want of them the old rotten and muddy saddles or bottomes of Corn stacks of Reeds, especially Pease-stacks, or Bean-stacks, provided that it be thoroughly rotten; for the less rotten it is, the worse it is. Also the scourings of common S.wers, and especially those through

through which much of mans urine doth pass, is a most wonderful and beneficial manure for these grounds; so are also the scowring of sinks and channels, which come from Kitchens and wash-houses, where great store of brine and salt broth is shed, and other greasie, fat, and putrified substances, as also abundance of sope-suds, and buck-ashes, and other sope and lee-washings, than which, there is no better manure that can be used for these kind of grounds.

After your ground is thus perfectly made and manured, and that Wheat-seed time doth draw on, which (as before was shewed) is ever at the latter end of *September*, you shall then plow up your ground again in that manner as was shewed for the former earths, to wit, much deeper than before: for you are to understand, that this ground being drest, as is before declared, there will nothing remain of the furrows which were first plowed up but the ashes, which being covered with sand, lime, and manure, the earth will lie plain and level, so that of necessity you must raise up new furrows of new earth, which being done, you shall then with your hacks, cut all the new earth into very small pieces, mixing them well with the other mould made of sand, lime, manure and ashes; then as was before said, you shall harrow it to make the mixture so much the better, and the mould so much the finer: and then if it have been sanded, you may sow your seed-wheat simply of it self, without any doubt of the plentiful increase thereof; but if it have not been sanded, then as in the foregoing Chapter, you shall not only steep your Seed in brine (as before shewed) but also you shall mix your Seed with Bay-salt, and so sowe into the ground; or if at the time of sowing (after it is plowed, hackt, and harrowed) you bestow either Pigeons-dung, or Pullens-dung, or Sheeps-dung upon the Land, it will be much better, and the Corn will give a much greater increase. Now as soon as you Land is sown, you shall forthwith harrow it again, and cover the Seed very close; then you shall clot it, smooth it, and sleight it (as was before shewed.)

As touching the weeding and cleansing of this earth after the Weeding. Corn is sprung up, you shall understand that there is great care to be had thereunto, for this ground is much subject unto weeds,

and those of the worst kind : for although for the most part it will be free from all manner of soft and tender weeds, as thistles, cockle, darnel, ketlocks, docks, rape, and such like herbal stuff, yet it is much subject to twitch-bryars, which grow at both ends, Ling, Wilde-time, and such-like, any of which as soon as you shall see to appear, or peep above the earth, you shall presently with your Nippers pull them up by the roots, and not suffer them in any wise to look a handful above the ground ; for if you do, their hardness is so great, and their roots so large and fast fixt into the mould, that you can by no means pull them away without great loss and hurt to the grain, pulling up with them all such roots of Corn, as shall be fixed near about them : for any other weak and superfluous things which shall grow from the Land, you may with ordinary weeding hooks cut them away ; as for long grass, whether it be soft or sedge, or any other such-like stuff, you shall not stir it, but let it grow : for it keepeth warm the roots of your Corn, and giveth nourishment and increase thereunto. Now for the profit of this Soil thus ordered and husbanded, it is equal with any of the former, and will bear Wheat very plentifully for the space of the three first years ; good Barley the fourth year with the help of the sheep-fold (as was before said) and good Oats the fifth, sixth, and seventh years ; and very good small Pease, the eighth year (for beans this Soyl will very hardly bear at all) and the ninth, tenth, and eleventh year it will bear very good meadow (though not altogether very fine pure grass, yet very good feeding and wholsom grass) or so good pasture as a man can reasonably require for any holding Cattle whatsoever ; nay, it will also indifferently well feed, and fat Cattle, though peradventure it requireth a little longer time than other finer ground will.

C H A P. VI.

Of the ordering, Tilling and Dressing of all plain simple barren Sands, bearing nothing but a short mossie grass.

HAVING thus (in as large manner as I hope shall be needful for any judicious or indifferent Reader) written of the Natures, Orderings, Plowings, and Dressings of all manner of barren

ren and unfruitful Clays, whether they be simple of themselves, or else compounded with other earths, as Sands, Chalks, Gravels, and such like; shewing by those natural burthens which continually of their own accord they do produce (which indeed is the easiest and safest way of knowledge) how to amend and better them, and bring them to that perfection of fruitfulness that the best earth shall but in a very small degree exceed them, nay, nay hardly any thing at all, except in the saving of a little charge and some labour, without which nothing is to be obtained by the Husbandman; neither is this charge or labour thus bestowed on these barren Grounds to be grutcht at by any honest mind; since the worst crop of ten or eleven will make good his charge and toil with a reasonable Interest; so that I make account, nine or ten years profits come into his Barns without purchase; for it is to be intended, that all these earths formerly spoken of, are not to be drest, or to put the Husbandman to any charge more than the first year of ten or eleven, for the second year he shall as soon as he hath gathered his Wheat off, which will be in *August*, and finisht other parts of his Harvest, presently put his Plow into the same Wheat-ground again, and plow it up, hack it, and harrow it, sowe it, harrow it again, clod it, and weed it, as in the former year, and so consequently of all the rest of the years following; whereby you perceive that all labours and charges are saved more than once plowing and sowing.

This then considered, it necessarily now followeth that I speak of the bettering, and bringing into perfection of all manner of barren sand Grounds, being simply of themselves, without any mixture of other earths, except one and the same kind; as sand with sand, though peradventure the colours of the Sands may alter; as red with white, yellow with black, &c. which in as much as the whole substance is sand without any contrary mixture, there it may well be called simple and not compound; and of these Sands, I purpose to treat, as formerly I did of the Clays; that is to say, by their outward faces and Characters, which are those burthens and increases, which of their own proper nature, without any help or compulsion of any other, they produce and bring forth into the world.

Plowing.

And first of that naughty cold and barren Sand, which lying upon high, stony, and mountainous Rocky places, or else upon lower cold bleak Plains, subject to the North, and North-East winds and tempests, or bordering upon the Seas, doth not bring forth any thing but a short mossie grass, which the Sun maketh bitter, and the cold dews fulsome and unsavory in taste. If any man then be Master of such unprofitable and unfruitful earth, and desire to have it brought to goodness, and perfection, you shall first, at the beginning of the Spring, as about middle *April*, or earlier, with a strong Plow answerable to the Soil, yet somewhat less, both in Timbers and Irons, then that wherewith you plow your Clay ground, plow so much of that earth up as you may conveniently compass, to sowe and dress exactly, and perfectly; for to undertake more, were to make all unprofitable, and to cast away much labour and charge, without any profit. This ground you shall plough of an indifferent depth, though not so deep as the Clays, you shall lay the furrows, though flat, yet close one to another, without leaving any bulk between, but ploughing all very clean, yet not so very clean and close together, that you may lay the green swarth, to the new ploughed or quick earth; but rather turn one swarth against another, so as the furrows may lie, and no more but touch the edges one of another. This when you have done, you shall then with your hacks, cut and break all the earth so turned up into very small pieces, and not only the earth so turned up into very small pieces, but also other green swarth which was left unplowed; provided that before this labour of hacking, you let the ground lie certain days in the furrows, that one swarth heating and scalding the other, they may both equally rot and grow mellow together: which once perceived by the blackness thereof, you may then at your pleasure hack it, and cut it, as is before declared.

Objection.

Now some may in this place object unto me, That this labour of hacking should be needless, in as much as all sand grounds whatsoever are out of their own nature so light, loose, and willing to dissever, that this toyl might very well and to good purpose be saved.

Answer.

To this I answer, That true it is, most Sands in their own natures

tures are loose and light, and willing to dissever into fine mould without any extremity, especially rich and fruitful Sands, whose predominant quality of warmth, giveth nourishment and increase : But these barren and cold Sands, in which is a certain flegmaticque toughnes, and most unwholsom driness, are of a clean contrary nature, and through the stony hardness thereof, they are as unapt to break and dissever, as any Clay whatsoever : besides, the swarth being of a tough mossie substance, (which ever carrieth a hard strong root answerable with the cold in which it is engendred) doth so constantly bind, fetter, and hold the mould together, that it is impossible for any harrow to break it in pieces, or to gather from it so much mould as may serve to cover the Corn, and give it root when it is sown into the same : And therefore this work of hacking is necessary.

When therefore you have thus hackt your Land, and distributed the mould into many small pieces, you shall then with all expedition Marle it; which forasmuch as it is no general nor common practice in every part of this Kingdom, I will first tell you what Marle is, and then how to find it, dig it, and use it for your best behoof. Of Marling.

Marle, you shall then understand, is (according to the definition of Master Bernard Pallissy) a natural, and yet an excellent Additions. Soil, being an enemy to all the weeds that spring up of themselves, and giving a generative vertue to all seeds that are sown upon the ground : or (for the plain Husbandmans understanding) it is a certain rich, stiff, and tough clay, of a glewy substance, and not fat or Oyly, as some suppose. This Marle is in quality cold and dry, and not hot (as some would have it) and it was earth before it came to be Marle, and being made Marle, yet it is but a Clay ground ; all Chalk whatsoever was Marle before it was Chalk, and all manner of stones which are subject unto Calcination or burning, as Lime-stone, Flint, or the like, were first Marl before they were stones, & only hardned by accident, and so not possible to be dissolved but by the fire ; as for Marle it self, when it is a little hardned, it is only dissolved by frosts, and nothing else ; and thence is the cause that Marle ever worketh better effect the second year than the first.

This Marle hath been made so precious by some Writers, that

it hath been accounted a fifth element, but of this curiosity I will not now dispute.

Touching the Complexions or Colours of Marle, there is some difference; for though all conclude there are four several colours in Marle, yet one saith, there is a White, a Gray, or Russet, a Black and Yellow; another saith, there is a Gray, a Blew, a Yellow, and a Red; and a third saith, there is a Red, and White, mixt like unto Porphyry. And all these may well be reconciled, and the colours may alter according to the climate and strength of the Sun: So that by these Characters, the Colour, the toughness, and the looseness when it is dried, any man of judgment may easily know Marle, from any other earth whatsoever. This Marle is so rich in it self, and so excellent for continuance, that it will maintain and enrich barren grounds, the worst for ten years, some for a dozen, and some for thirty years; yet there is a great respect to be had in laying of this Marle upon the ground, that is to say, that you lay it neither too thick nor too thin, that you have it neither too much, nor too little; for any of these extremities are hurtful; and therefore hold a mean, and see there be an indifferent mixture between the Marle and the earth, on which it is laid.

For the general finding out of this Marle, there is no better way for readines, and the saving of charges, than by a great Augur or Wimble of Iron, made to receive many bits, one longer than another, and so wrestling one after another into the ground, to draw out the earth, till you find you are come to the Marle, which perceived, and an assay taken, you may then dig at your pleasure.

Now for the places most likely where to find this Marle, it is commonly found in the lowest parts of high Countries, near Lakes and small Brooks, and in the high parts of low Countries, upon the knolls of small hills, or within the Clifts of high Mountainous Banks, which bound great Rivers in: To conclude, you shall seldom find any of these barren Sands, but they are either verged about with Marle Grounds, or if you will bestow the labour to dig below the Sand, you shall not fail either to find Marle, or some Quarry of stone, or both; for in some places Marle lieth very deep, in other some places within

a Spades graft of the upper swarth of the earth : therefore it shall be good for you to make proof of all the most likely parts of your Ground to find out this Marle ; and as soon as you have found it out, you shall with Mattocks and Spades dig it up and carry it to your land , there laying it in big round heaps, and setting them within a yard or two one of another : thus when you have filled over all your Ground (which would be done with as great speed as might be ; for the antient custom of this Kingdom was, when any man went about to Marle his ground, all his Tenants, Neighbours and Friends would come and help him to hasten on the work) you shall then spread all those heaps, and mixing the Clay well with the Sand, you shall lay all smooth and level together ; and herein is to be observed, that if the land you thus Marle shall lie against the side of any great Hill or Mountain, whereby there will be much descent in the ground ; then you shall (by all means) lay double as much Marle, Sand, or other compost on the top of the Hill as on the bottom, because the rain and showers which shall fall, will ever wash the fatness of the earth down to the lowest parts thereof.

Now in the laying of your Marle, you are to hold this observation, That if you lay it on hard and binding grounds, then you are to lay it in the beginning of Winter : but if on grounds of contrary nature, then it must be laid in the Spring, or Summer. Again, you shall observe, that if you cannot get any perfect and rich Marle, if then you can get of that earth which is called Fullers earth, and where the one is not, commonly ever the other is, then you may use it in the same manner as you should Marle, and it is found to be very near as profitable.

When your ground is thus Marled (if you be near to the Sea-side) you shall then also sand it with salt Sea-sand, in such sort as was formerly declared, only you may forbear to lay altogether so much upon this Sand ground as you did on the Clay ground, because an half part is fully sufficient. If you cannot come by this Salt-sand, then instead thereof, you shall take Chalk and Chalk, if any be to be had near you, and that you may lay in the more plentiful manner than the Sand ; and albeit it is said, that

that Chalk is a wearier out of the ground, and maketh a rich father, yet a poor son, in this Soil it doth not so hold, for as it fretteth and wasteth away the goodness that is in the Clay grounds, so it comforteth and much strengtheneth the sand-earths: and this Chalk you shall lay in the same manner as you did your Marl, and in the same manner spread it and level it; which done, you shall then Lime it, as was before shewed in the Clay grounds; yet not so abundantly, because also a half part will be sufficient: after your Liming, you shall then manure it with the best manure you have, whether it be dung of Cattle, Horse, Sheep, Goats, Straw, or other rubbish; and that being done, and Seed-time draweth on, you shall then plow up your ground again, mixing the new quick earth and the former Soyls so well together, that there may be little distinguishment between them: then you shall hack it again, then harrow it; and lastly sow it with good, sound, and perfect Seed: and of Seeds, though Wheat will very well grow upon this earth, yet Rye is the more natural and certain in the increase; yet according to the strength of the ground, you may use your discretion, observing that if you sow Wheat, then to steep it before in brine or salt Sea-water, as was before described; but if you sow Rye, then you shall sow it simply without any helps, except it be Pigeons-dung, or Bay-salt simply of itself, in such manner as hath been before declared, either sowing the salt with the Corn, or before the Corn, as shall seem best in your own discretion.

After your seed is sown, you shall then harrow it again, clot it, smooth it, and sleight it, as before is shewed in the second Chapter; which done (after the Corn is shot above the earth) you shall then look to the weeding of it, being somewhat a little too much subject to certain particular Weeds, as are Hare-bottles, wild Chess-bolls, Gypsie-flowers, and such-like, any of which, when you see them sprung up, you shall immediately cut them away close by the roots; as for tearing their roots out of the ground with your Nippers, it is not much material, for the cutting of them is sufficient, & they will hardly ever again grow to do you any hinderance; many other weeds there may grow amongst these, which are also to be cut away, but these are the principal, and of most note; whereof as soon as you have cleaned

fed your lands of these and the rest, you shall then refer the further increase of your profit unto Gods Providence.

Lastly, you shall understand that this ground being thus plowed, dressed, and ordered, will without any more dressing, but once plowing and sowing, every year bear you good Wheat or good Rye three years together; then good Barley the fourth year; good Oats, the fifth, sixth, and seventh years; excellent good Lupins the eighth year, and very good Meadow or Pasture three or four years after, and then it shall be necessary to dress it again in such manner as was before described.

The profits.

CHAP. VII.

Of the Plowing, Tilling, Ordering, and Enriching of all barren Sand, which are laden and over-run with Braken, Fern, or Heath.

NExt unto this plain, cold, barren Sand, which beareth no other burthen but a short mossie Grass, I will place that Sand which is laden and over-run with Braken, Fern, or Heath, as being by many degrees more barren than the former, both in respect that it is more loose and less substantial, as also in that it is more dry and harsh, and altogether without nutriment, more than an extreme sterile coldness, as appeareth by the burthen it bringeth forth, which is Braken or Fern, a hard, rough, tough weed, good for nothing but to burn, or else to litter store Beasts withal, for the breeding of Manure; or if you strow it in the High-ways where many Travellers pass, it will also there turn to good reasonable compost.

Of this kind of ground, if you be Master, and would reduce it unto fertility and goodness, you shall first, whether the braken be tall and high (as I have seen some as high as a man on Horseback) or short, and low (and indeed most commonly these barren earths are, for tall Fern or Braken shews some strength in the ground) you shall with sythes first mow it down in the month of May, then wither it and dry it upon the ground, and after spread it as thin as you can over all the earth you intend to plow; which done, you shall bring your plow and begin to plow the ground after this order: first you shall turn up your furrow,

Of destroying Braken.

and lay flat to the ground, green-swarth against green swarth, then look how broad your furrow is so turned up, or the ground so covered; and just so much ground you shall leave unplowed between furrow and furrow, so that your land may lie a furrow and a green balk, till you have gone over all the ground; then you shall take a paring-shovel of Iron, and pare up the green swarth of all the balks between the furrows at least two inches thick, and into pieces of two or three foot long, and with these pieces of earth, and the dry Fern which is pared up with them, you shall make little round hollow bait-hills, as in the third or fourth Chapters, and these hills shall be set thick and close over all the ground, and so set it on fire and burn it; then when the fire is extinct, and the hills cold, you shall first with your hacks cut in pieces, all the furrow that were formerly turned up, and then break down the burnt hills, and mix the ashes and earth with the other mould very well together; which done, you shall then with all speed marle this earth as sufficiently as possibly may be, not scanting it of Marle, but bestowing it very plentiful upon the same; which done, you shall then plough it over again, and plowing it exceeding well, not leaving any ground whatsoever untorn up with the plow; for you shall understand, that the reason of leaving the former balks, was, that at this second plowing after the Marle was spread upon the ground, the new, quick, and unstirred fresh earth might as well be stirred up to mix with the Marle, as the other dead earth and ashes formerly received, whereby a fresh comfort should be brought to the ground, and an equal mixture without too much driness, and this second Ardor or Plowing would begin about the latter end of June.

Of Marle.

Sanding and
Liming.

After your ground hath been thus marled, and the second time plowed, you shall then sand it with salt Sea-sand, Lime it, and manure it, as was declared in the foregoing Chapter: and of all Manures for this Soil, there is not any so exceeding good as sheep-manure, which, although of the Husbandman it be esteemed a Manure but for one year, yet by experience in this ground it hapneth otherwise, and is as durable, and as long lasting a compost as any that can be used; and besides, it is a great destroyer of Thistles, to which this ground is very much subject, because.

cause upon the alteration of the ground the Fern is also naturally apt to alter into Thistle, as we daily see.

When your ground is thus drest, and well ordered, and the Seed-time cometh on, you shall then plough it again in such manner as you did the second time, that is to say, very deep, Cle, and after the manner of good Husbandry, without any rest, balks or other disorders; then shall you hack it very well, then harrow it, and then sowe it, but by mine advice, in any case, I would not have you to bestow any Wheat upon this Soil, (except it be two or three bushels on the best part thereof, for experience-sake, or provision for your household) for it is a great enemy unto Wheat, and more than the marl: it hath no nourishment in it for the same, because all that cometh from the salt-Sand, Lime, and Manure, is little enough to take away the natural sterility of the earth it self, and give it strength to bear Rye, which it will do very plentifully; and therefore I would wish you for the first three years only to sowe the best Rye you can get into this ground; the fourth year, to sowe Barley; the fifth, sixth, and seventh, Oats; and of Oats, the black Oat is the best for this ground, maketh the best and kindest Oat-meal, and feedeth Horse or Cattle the soundest; as also it is of the hardest constitution, and endureth either cold or driness much better than the white Oat, the cut Oat, or any Oat whatsoever; the eighth year you shall only sowe Lupins, or Fetches; and three years after you shall let it lie for Grass, and then drest it again as before-said; for it is to be understood, that in all the following years (after the first year) you shall bestow no labour upon this ground, more than plowing, sowing, hacking, and harrowing at Seed-time only.

But to proceed to the orderly labour of this ground, after you have sown your Rye, you shall then harrow it again, clot it, smooth it, and sleight it, as was before shewed in the second Chapter of this Book. And although a man would imagine that the sandy looseness of this Soil, would not need much clotting or sleighting of the Earth, yet by reason of the mixture thereof with the Marle and Manure, it will so ho'd and cleave together, that it will ask good strong labour to loosen it, and lay it so hollow and smooth, as in sight it should be.

Plowing and
Sowing.

Labour after
Sowing.

Weeding.

Touching the Weeds which are most subject to this Soil, they are Thistles and young Brakes, or Ferns, which will grow up within the Corn, which, before they rise so high as the Corn, and even as it were at the first appearing, you must with your wooden Nippers pull up by the roots, and after take up and lay in some convenient place where they may wither and rot, and so turn to good Manure.

C H A P. VIII.

Of the Plowing, Tilling, Ordering, and Enriching of all barren Sands, which are laden and over-run with Twitch, or Wild Bryar.

HAVING written sufficiently of this hard and barren, waste, wild, sandy ground, which is over-run with Braken, Fern, Heath, and such like. I will now proceed, and unto it joyn another Sand which is much more barren, and that is the Sand that bringeth forth nothing but wild Twitch, Bryars, Thorn-bush, and such like under-growth, of young misliking wood, which never would rise or come to profit, the bitter cold driness of the earth wherein it groweth, and the sharp storms to which the Clime is continually subject both day and night, blasting it in such manner, that nothing appeareth but starved, withered, and utterly unprofitable burthens, good for nothing but the fire, and that in a very simple sort. Such grounds if you be Master of, and would reduce it to profit and fruitfulness, you shall first with hooks, or axes cut up the upper-growth thereof, that is, the bushes, young Trees, and such like; then you shall also stub up the Roots, not leaving any part of them behind in the earth, carrying away both home to your house to be employed either for fuel, or the mending of the hedges, or such like, as you shall have occasion; this done, you shall take a pair of strong Iron harrows, and with them you shall harrow over all the earth, tearing up all the Twitch, Bryars, and rough grass so by the roots, that not any part but the bare earth may be seen; and when your Harrows are cloyed, you shall unlade them in several places of the ground, laying all such rubbish of weeds, and other stuff which the Harrows shall gather up in a little round.

Destroying
Twitch and
Bryars

round hill close up together, that they may sweat, wither and dry; then spreading them abroad, and mixing them well with dry straw, burn them all over the ground, leaving no part of the weeds or the grass unconsumed, then, without beating in of the ashes, you shall presently plow the ground all over very clean as may be, laying the furrows as close as you can to one another, and leaving no earth untoucht or untorn up with the plough; which done, you shall immediately hack it into small pieces, and as you hack it, you shall have idle Boys to go by the hackers, to gather away all the roots which they shall loosen or break from the mould, and laying them on heaps on the worst part of the ground, they shall there burn them, and spread the ashes thereon; after your ground is thus harrowed, plowed and hackt, you shall then muck it, as was formerly shewed in the sixth Chapter; then shall you sand it, lime it, and manure it as before-said.

Now of Manures, which are most proper for this Soil, you shall understand, that either Oxe, or Horse-manure, rotten straw, or the scouring of Yards is very good, provided that with any of these Manures, or all these Manures, you mix the broad-leaved weeds, and other green weeds, which do grow in Ditches, Brooks, Ponds, or Lakes, under Willow-trees, which with an Iron Rake, Drag, or such like Instrument, you may easily draw upon the Banks, and so carry it to your Land, and there mingle it with the other manure, and so let it rot in the ground; this Manure thus mixed is of all other most excellent for this Soil, both by the experience of the Antients who have left it unto memory, as also by daily practise now used in sundry parts of this Kingdom, as well because of the temperate coolness thereof, which in a kindly manner asswages the lime and sand, as also through moisture, which distilling through those warm Soils, doth quicken the cold starved earth, and giveth a wonderful encrease to the Seed, that shall be thrown into the same.

After your ground is thus sufficiently drest with these Soils Harrowing, and Manures. you shall then plow it again the second time, and other labours which would be after *Michaelmas*; after the plowing you shall then hack it again, and be sure to mix the earth and the manures very well together, then you shall break it in gentle manner

with a

with your Harrows, and then sowe it ; which done, you shall harrow it much more painfully, and not leaving any clots or hard earth unbroken that the Harrow can pull in pieces : as touching the Seed, which is fittest for this earth, it is the same that is spoken of in the next foregoing Chapter ; as namely, the best Rye, or the best Maſlin, which is Rye and Wheat equally mixt together ; or if there be two parts Rye, and but one Wheat, the Seed will be so much the more certain and sure holding ; and this Seed you may sowe on this ground shree years together ; then Barley, then Oats, and so forth, as is formerly writ of the grounds foregoing. After your ground is sown and harrowed, you shall then clot it, sleight it, and smooth it as you did the other ground before ; and then lastly with your back Harrows (that is, with a pair of Harrows, the teeth turned upward from the ground, and the back of the Harrow next unto the ground) you shall run over all the ground, and gather from the same all the loose Grasse, Twitch, or other Weeds that shall any ways be raised up, and the same so gathered you shall lay at the Lands ends in heaps, either to rot for manure, or else at the time of the year to be burnt for ashes, and sprinkled on the earth the next Seed year.

Lastly, touching the weeding of this Soil, you shall understand the Weeds which are most incident thereunto, are all the same you first went about to destroy ; as namely, Twitch, rough wild Grasse, and young woody under-growth, besides, Thistles, Hare-bottles, and Gypſie-flowers ; therefore you shall have a great care at the first appearance of the Corn, to see what Weeds arise with it (for these weeds are ever fully as hasty as the Corn) and as soon as you see them appear, both your self and your people with your hand shall pull them up by the roots, and so weed your land as you would weed a Garden, or Woad ground. Now if at this first weeding (which will be at the latter Spring, commonly called *Michaelmas*, or the Winter Spring) you happen to omit and let some weeds pass your hands unpulled up (which very well may chance in so great a work) you shall then the Spring next following (seeing them as high, or peradventure higher than the Corn) with your wooden nippers pull them up by the roots from the ground, and so cast them away.

As touching the cutting them up close by the ground with ordinary weed-hooks, I do in no sort allow it; for these kind of weeds are so apt to grow, and also so swift in growth, that if you cut them never so close in the Spring, yet they will again over-mount the Corn before Harvest, and by reason of their greatness, toughness, and much hardness, choak and slay much Corn that shall grow about them; and therefore by all means you shall pull these weeds up by the roots whilst they are tender (if possible you can) or otherwise in their strongest growth, sith their sufferance breedeth great loss and destruction.

C H A P. IX.

Of their Plowing, Tilling, Ordering, and Enriching of all barren Sands, which are over-run with Moors, or moorish stinking long Grass.

UNto these foregoing barren Sands, of which I have already written, I will lastly joyn this last barren sand, being of all earths, whether Clay or Sand, the most barren. And that is that filthy, black, moorish Sand which beareth nothing but stinking putrified Grass or Moss, or Moss and Grass mixed together, to which not any Beast or Cattle, how courly or hardly bred soever, will at any time lay their mouths; and this kind of ground also is very much subject to marshes and quagmires, of which that which is covered with Moss or Grass, is the worst, and that which is tufted above with Rushes, the best, and soonest reduced unto goodness: In brief, all these kind of grounds generally are extremely moist and cold, the superabundance whereof is the occasion of the infinite sterility and barrenness of the same.

And therefore he that is Master of such unprofitable Earth, and would have it brought to some profit or goodness, shall first consider the scituation of the Ground, as whether it lie high or low; for some of these marsh grounds lie low in the Valleys, some on the sides of Hills, and some on the tops of Mountains: then, whether the much moistness thereof be fed by River, Lake, or Spring, whose veins not having current passage through, or upon the earth, spreads lookingly over all
thee

the face thereof, and so rotting the mould with too much wet, makes it not only unpassable, but also utterly unprofitable for any good burthen.

Grounds for
Fish-ponds.

Now if you find that this marish Earth lie in the bottom of low Valleys, as it were guarded about with Hill, or higher grounds, so that besides the feeding of certain Springs, Lakes, or Rivers, every shower of rain or falling of water from higher grounds bringeth to these an extraordinary moisture to maintain the rottenness, in this case this ground is past cure for grass or Corn, and would only be converted, and made into a fish-pond, for the breeding and feeding of Fish, being a thing no less profitable to the Husbandman for keeping his house, and furnishing the Markets, than the best Corn-lands he hath; and therefore when he maketh any such Pond, he shall first raise up the head thereof in the narrowest part of the ground, and this head, by driving in of stakes, and piles of tough and hard wood, as Elm, Oak, and such like, and by ramming in of the earth hard between them, and sadding them so fast that the mould can by no means be worn down, or undermined with the water, he shall bring it to as firm earth as is possible, and in the midst of this head he shall place a sluice or flood-gate made of sound and clean Oak timber, and plancks, through which at any time to drain the Pond when occasion shall serve; and this done, you shall dig the Pond of such depth, as the earth conveniently will bear, and casting the earth upon either side, you shall make the Banks as large and strong as the ground requireth; then if any Spring which did before feed the earth be left out of the compass of the Pond (because it lieth too high to be brought in) then shall you by drawing gutters or drains from the Spring down to the pond, bring all the waters of the springs into the Pond, and so continually feed it with fresh and sweet water. Then storing it with fish of best esteem, as *Carp*, *Tench*, *Beam*, *Pearch*, and such like, and keeping it from weeds, filth and vermine, there is no doubt of the daily profit.

But if this marish and low ground, though it lie low, and have many springs falling upon it, yet it lieth not so extreme low but that there is some River or dry Ditches bordering upon it, which lie in a little lower descent, so that except in case of
inun-

inundation the river and ditches are free from the moisture of this ground, but where there is any ^{over}-flowing of waters, there this marsh ground must needs be drowned ; in this case, this ground can hardly be made for Corn, because every overflow putteth the Grain in danger, yet may it be well converted to excellent pasture or meadow, by finding out the heads of the Springs, and by opening and cleansing them, and then drawing from those cleansed heads, narrow drains or furrows, through which the waters may pass to the neighbours ditches, and so be conveyed down to the low Rivers : leaving all the rest of the ground dry, and suffering no moistures to pass, but what goeth through these small deep Channels ; then as soon as Summer commeth, and the ground begins to harden, if you see any of the water stand in any part of the ground, you shall forthwith mend the drain, and help the water to pass away ; which done, (as the ground hardneth) you shall with hacks and spades lay the swarth smooth and plain, and as early in the year, as you can conveniently, you shall sow upon the ground good store of Hay-seeds, and if also you do manure it with the rotten staddles or bottoms of hay-stacks, it will be much the better, and this staddle you shall not spread very thick, but rather of a reasonable thinness, that it may the sooner rot and consume upon the same.

But if this marsh and filthy ground do not lye so low as these low valleys, but rather against the tops of hills ; you shall then, first open the heads of all the springs you can find, and by several drains or sluces, draw all the water into one drain, and so carry it away into some neighbouring ditch and valley ; and these drains you shall make of a good-depth, as at least two foot, or 2 foot and a half, or more, if need require, and then cross-wise every way overthwart the ground, you shall draw more shallow furrows, all which shall fall into the former deep drains, and so make the ground as constant, and firm as may be : then having an intent to employ it for corn, you shall bring your Plow into the ground, being a very strong one, and not much differing in Timber-work, or Irons from that which turneth up the Clay-grounds, and laying before the Plow long waddes, or rousls of the straw of Lupins, Pease, or else Fetches, (but Lupins is

G

the

Draining of
wet grounds.

the best) you shall turn the furrows of the earth with the plow upon the wades, and so cover or bury them in the mould, and thus do unto every furrow, or at least unto most of the furrows you turn up, and so let it lye a little time to rot, as by the space of a fortnight or thtee weeks, in which space, if the ground receive not rain and moisture enough to rot the straw thus formerly buried, you shall then by stopping the drains, making the Springs over-flow, gently wash the ground all over and no more, and then presently drain it again; which done, as soon as the earth is dry, you shall hack it, and break it into small pieces, and then you shall also sand it, lime it, and manure it.

And lastly, you shall Marl it, but if no salt sand be to be had, then instead of it you shall chalk it, yet of all the rest you shall take the least part of chalk.

This done, about the latter end of *July* you shall plow up the ground again with somewhat a better and deeper stich than you did before, that if any of the straw be unrotted, or unconsumed, it may again be raised up with the new moist earth, and so made to waste more speedily; and if at this second carrying you do see any great hard clots to rise, then with your hacks you shall break those hard clots in pieces, laying the Land clean without clots, weeds, or any other annoyance, and so let it rest till *October*, at which time you shall plough it over again, hack it, harrow it, and then sow it with the best Seed-wheat; for this soyl thus drest and manured, albeit it be of all other the most barren, yet by reason of this moisture, which at pleasure may be put to it, or taken from it, and the mixture of these comfortable soyles and composts, it is made as good and fruitful as any earth whatsoever, and will bear Wheat abundantly for the space of three years together, then good Barley the fourth year, with a little help of a Sheep-fold, or Sheeps manure: then Rye the fifth year; Oats the sixth, the seventh and eighth years; small Pease the ninth year; good meadow or pasture three years following, and then to be new drest again, as before-said.

Now as soon as your Seed-Wheat is sown, you shall then harrow the ground again, and be sure to cover the Wheat both deep and close; as for the clots, which shall arise from this soyl,

it shall not matter whether you break them or no, for by reason of their moisture, they will be plyant and easie for the Wheat to pass through, so that you shall not care how rough your land lye, so it lye clean, and the Corn well covered; but for all other seeds, you shall break the clots to dust, and lay the land as smooth as may be.

Now for the weeding of this soyl, you will not be much troubled therewith, because this ground naturally of its own accord putteth forth no weeds, more than those which are ingendred by the new made fruitfulness thereof, and those weeds for the most part are a kind of small sedge, or hollow reed; any of which if you see appear, or with them any other kind of weed, you shall at the first appearance, either pull them up by the roots with your wooden nippers, or else cut them close by the ground with your weed-hooks.

Weeding.

CHAP. X.

A general way for the enriching of any poor arable ground, either Clay or Sand, with less charge than formerly.

IF the former demonstrations and instructions which I have shewed thee, appear neither too difficult, or too costly (for now I speak to thee plain, simple, poor Husbandman) and yet thou art master of none but barren earth, then thou shalt by thine own industry, or the industry of thy Children, Servants, and such like, or by contracting with Taylors, Botchers, or any poor people that will deserve a penny, gather up, get, or buy all the rags, shreds, old base pieces of woollen cloth whatsoever, which are onely cast, and fit for nothing but the Dung-hill, and of these thou canst compass but a sackfull, or a sackfull and a half, it is sufficient for the dressing of an acre of arable ground. These shreds and rags (torn small) or hackt and hewed into small pieces or bits, thou shalt thinly spread over the land before fallowing time, then coming to fallow, plough them all into the ground, & be sure to cover them, then give your land the rest of its ardors, as stirring, soyling, ridging, &c. in their due seasons, and after an husbandly manner: then when you come to sow it, you shall take



Raggs of
woollen cloth.

Steeping of
seed corn.

the slimie thick water which commeth from dung-hills, or for want thereof, water in which Cow-dung hath been steeped, and therein you shall steep your seed-corn; that is to say, if it be barley, you shall steep it for the space of thirty six hours, or thereabouts; if it be Wheat, but eighteen hours; and if it be Pease, but twelve hours; for Rye, or Oats, not at all: and the seed thus steeped, you shall sow it according to good Husbandry, and there is no doubt of wonderfull increase.

Or any pulse.

There be others which take the Seed-corn, and steeping it in good store of Cow-dung, and water, stir all together for an hour in the morning, and an hour at night, and then being settled, drain the water from the seed and the dung, and the next morning sow the corn and the dung both together on the land, being sure not to scant the Land of Seed, and no doubt the increase will be wonderfull.

Now if this cannot be conveniently done, or that you want dung, if then you take ordinary water, and therein steep your seed, it is good also, and especially for barley, and is approved by daily experience.

Shavings of
Horn.

But now me-thinks, I hear the poor man say, that here is but one acre drest, and that is a small proportion; to this I answer, If thou beest able but to drest one acre with these woollen raggs, thou shalt then search among the Horners, Tanners, Lanthorn-makers, and such like, and get all the wast shavings of horn which thou canst possibly compass, as before of the raggs, so of these a sack and a half, or two sacks will drest an acre: these shavings (which are indeed good for no other use) you shall scatter upon the land as you did the raggs, then plow them in after the same manner, so order the ground, so sow, and in the same manner steep the seed, and questionless the increase will be wonderfull great: These manures will last five years without any renewing. Now if of these you cannot get sufficient to trim all your ground, you shall then deal with Butchers, Sowse-women, Slaughtre-men, Scullions, and the like; and from these you shall get all the hoofs you can; either of Oxe, Cow, or Bull, Calf, Sheep, Lamb, Deer, Goates, or any thing that cheweth the cud, and which indeed, if not for this use, are otherwise utterly cast away to the dunghill, and despised: And these hoofs

Hoofs of cat-
zell.

you shall cut and hew into small pieces, and scatter thick upon your land at fallowing time, then plow them in, as foresaid, and do in all points as with the other manures already recited, and so steep your seed, and there cannot be a greater enricher of arable ground whatsoever.

Now if all these will not yet compost your land, you shall then see what sope-ashes you can get, or buy, for of all manures there is none more excellent, for besides, it giveth an exceeding strength and farness to the Land; it also killeth all manner of weeds, great and small, as Broom, Gorse, Whinnes, and the like, and it killeth all manner of Worms, & venemous creeping things; it is excellent for Woad, & the ground renewed yearly therewith, may be sown continually: These sope-ashes must be laid on the Land after fallowing, and then stirred in; two load thereof will serve to dress an acre: when it is fit for seed, the seed must be steeped as aforesaid, and then sown, and the increase will quit the charge manifold. These sope-ashes are also excellent good for Hemp, and Flax, being thinly sown upon the Land, after it is plowed, and immediately before the Seed be sown: but if you have more Land to dress, then you must make use of your own ordinary manure, as is Oxe-dung, Horse-dung, and the like, which that you may make richer and stronger than otherwise of its own nature it would be, you shall cause continually to be thrown upon it, all your powdered beef broth, and all other salt broths or brines, which shall grow or breed in your house; also all manner of soap suds, or other suds, and washings, which shall proceed from the Laundry, and this will so strengthen and enrich your manure, that every load shall be worth five of that which wanteth this help. There be divers other manures, which do wonderfully enrich and fatten all manner of barren grounds, as namely, the hair of beasts hides, (which for the most part, Tanners and Glovers do cast away) this thinly spread on the Land, and plowed in, brings every year a fruitfull crop. Again, if Braken, or Fern be layed a foot thick upon the earth, and then a layer of earth upon it, then another layer of braken, and a layer of earth upon it, then another layer of braken, and another layer of earth, and so layer upon layer, till the heap be as bigg as you intend it, and so left to rot all the Winter following, there cannot be a better

Of Woad.

The enriching
of ordinary
manure.

The hairs of
beasts hides.

Of braken.

To rot dung
quickly.

manure for any arable ground; for you shall understand, that the earth will so rot the braken, and the braken so soak into the earth, that they will become both one rich substance. And herein you shall note, that whensoever you would have any substance (of what condition soever) quickly to rot, and turn to manure, that the only way is, to mix it with earth, and that will in short space bring it to rottenness. Now this braken and earth thus rotted, you shall lay upon your land as you do your ordinary dung of Cattel, and then sow your seed being steeped as aforesaid,

Of Malt-dust.

Next, your Malt-dust, which is the sprout, come, smytham, and their excrements of the Malt, as an excellent manure for arable land, allowing three quarters thereof for an acre, and strowing it upon the land after it is plowed, and ready to be sown.

Of Rotten
Pilchers and
garbage.

There is another manure which albeit it is not plentiful every where, yet in some places it is, and not inferior to any manure before spoken of, and that is your rotten Pilchers after the oyl is taken from them, & the carcasses cast to the dungill, this laid on the land, and plowed in, bringeth Corn in great abundance; and no less doth the carcasses, and garbage of all kind of fish whatsoever, especially of sea-fish.

Of blood of
fals.

Lastly, the blood entralls, and offall of any beast, is an excellent manure of any kind of grain, plant, or tree, but especially for the Vine, for to it there is no nourishment of greater force or efficacy: also, if this blood be tempered with lime, it is exceeding comfortable for grain, and destroyeth worms, and other creeping things, which hurt Corn, only it must not be applied presently, but suffered for a little time to rot, lest the too much heat thereof might scorch and do hurt to the root of the Corn: this manure is to be laid on the earth when you sow it, & sow the seed, and it harrowed or plowed in together; which done, after the order of good workmanship, there is no doubt of the encrease.

CHAP. II.

*How to Enrich for Corn, any barren, rough, moody ground,
being newly stubbed up.*

IF you have any barren woody ground, which is newly stubbed up, and that you would convert it to arable, you shall then take a great quantity of the underwood, or worst brush wood which was cut from the same, and in the most convenient place in the field, as in the midst, or near thereabout, you shall frame it into a broad hollow pile, and then cover it all over with great sods of earth; which done, set fire on it, and leave no part thereof (either wood or earth) unburnt, then take those ashes and spread them all over the field, so far forth as you mean to plough up, then with a good strong plough fallow the ground as deep as you can, and so let it rest till it be almost *May*, then take either Fern, Stubble, Straw, Heath, Furrs, Sedge, bean stalks, or any other wast growth, take I say, either any one, or more of these, or altogether, as you stand possesst of them, and burn them to ashes, and therewith cover your land the second time, and then in summer stirr it within a Month, after soyl it, then at the beginning of *October*, or a little before, plough it again, and sow it with Rye the first crop, and you shall see the increase will be very plentifull; the next year you may sow it with Wheat, the third year with Barley, the fourth year with Pease, Lupins, Fetches, or any other pulse, and then begin with Wheat again; for it is credibly said, that this manner of dressing these barren, woody grounds, shall maintain and keep the earth in good heart, and strength in the worst places, for the space of four years, in that which is in any thing reasonable for the space of six years, and where there is any small touch of fertility, for the space of sixteen years; of which there are daily experiences in *France*, about the Forrest of *Arden*, and some with us here in *England*, in many woody places.



Wood ashes.

Ashes of Fern,
Straw, &c.

CHAP. XII.

The manner of reducing and bringing into their first perfection all sorts of grounds, which have been over-flowed, or spoiled by salt-water, or the Sea-breach, either arable or pasture, as also the enriching, or bettering of the same.

The difficulty
of this labour.

The vertues
of Salt.

The vices
which come
from Salt.

THere is nothing more hard or difficult in all the art of husbandry, then this point of which I am now to intreat; as namely, the reducing and bringing unto their first perfection all sorts of grounds, which have been over-flowed, or else spoiled by the Sea-breach, and bringing in of too great abundance of salt-water, which to some men of little experience, and free from those dangerous troubles, may appear a matter very sleight, and the wound most easie and curable; and the rather, because in all my former relations, and demonstrations, touching the bettering of ever severall sort of ground, I do apply, as one of my chiefeft ingredients, or simples, by which to cure Barrenness, Salt-Sand, salt-weeds, salt-water, salt-brine, Ashes, Lime, Chalk, and many other things of salt nature, as indeed all the manures and marles whatsoever, must either have a salt quality in them, or they cannot produce fruitfulness, so that to argue simply from natural reason; If salt be the occasion of fruitfulness, and increase, then there cannot be much hurt done by these over-flowes of the salt-wrter, that it should rather add a fattening and enriching to the ground, then any way to impoverish it, and make it incapable of growth or burthen. But experience, (which is the best Mistress) shews us the contrary, and there is nothing more noisome and pestilent to the earth, then the super-abundance, and too great excess of saltness; for according to our old Proverb, of *omne nimium*, that too much of every thing is vitious, as we see in the state of man's body, that your strongest poysons, as *Antimony*, or *Stibium*, *Coloquintida*, *Rhubarb*, and the like, taken in a moderate measure, are almost healthfull, and expell those malignant qualities which offend the body, and occasion sickness; but taken in the least excess that can be devised, they then (out of their vitious and naughty qualities) do suddenly and violently destroy all heat, and bring upon the body

body inevitable death, and mortality; so is it with this matter of salt, and the body of the earth; for as by the moderate distributing thereof, it correcteth all barren qualities, disperseth cold, and naughty vapours, and yieldeth a kind of fatness and fruitfulness, whereby the Seed is made more apt to sprout, and the ground more strong or able to cherish the same, till it come to perfection, through the sharp, warm, and dispersing quality thereof; so being bestowed in too great abundance and excess, whereby the earth is surfeited, and as it were overcome, and drowned up with too much of this natural goodness, and helpful quality, then all his proper vertues turn to egregious vices, as his wholsome sharpness to a fretting, gnawing, and destroying greediness, his comfortable warmth to a consuming and wasting fierceness, and his gentleness in dispersing to an infectious and venomous pollution, by the joynt qualities of all which together, the ground is made neither fit to receive any thing from the hand of the Husbandman, nor yet to produce or bring forth any of it self, because every good quality is abused or expelled, and nothing but unnaturalness, and sterility left, which like a Serpent lodgeth in the ground, and will suffer no good thing to have society with it: And these are the effects and mischiefs which are occasioned by these Sea-breaches, or inundations of the salt-water.

It is certain, that although in the salt marshes, where the Sea cometh in at certain times, and only washeth or sprinkleth the ground all over. and so departeth, there is neither want of grass, nor yet complaint of any evil quality in the grass; yet it is most certain, that no overflow of Salt-water, how little or moderate soever, can be truly said to be wholsom for any kind of grass-ground whatsoever; for grass is compounded of an infinite world of plants and simples, and most of them of several natures and qualities, so that if it give nourishment to one, yet it may destroy ten; neither do I find it by any of the Antients, simply and properly applied unto the grass grounds, but first unto the arable, in which having spent its primary, or first strength upon the seed, (which is a great and greedy devourer, or cater up of the strength, and fatness of the earth) it then prepares and makes the ground more able and fit to bring forth

The abuse of
salt in excess.

Of salt mode-
rately used.

No overflow
of salt water
good for grass.

The grounds
of the salt
Marshes.

forth grass, and that of the best and finest kind : for although the Masters of the Salt-marshes find a singular and rare profit in those grounds for the feeding, breeding, fattening, and sustaining of their great Flocks of Sheep ; which upon these Salt grounds, they say they will never rot or perish by that universal Disease ; yet they must not impute it to the great quantity, goodness, or any growth in the grass, but to the salt which they lick up in the grass, and to the salt quality of the grass, which is not only an Antidote or preservative against that noysom and pestilent mortality, but also a delightful and pleasant food wherein those Cattle take more contentment than in any other thing whatsoever ; so that I must necessarily rest upon this Conclusion, that as more moderate washing and overflowing of Salt-waters are no certain or particular great helps unto grass-grounds, especially if they be applied thereunto, and to that purpose simply at the first, without any other preparative or working by a former means, as by tillage, digging, delving, or the like ; so the exceeding great Inundation, or Sea-breaches which lie long soaking and sinking into the earth, must needs be a certain infallible, and almost incurable cause of barrenness, eating, spoiling, and consuming the very roots of all manner of plants, trees, and growths, by which the ground is made utterly incapable of generation or bringing forth : and therefore where these great inundations or over-flowings cannot be either prevented or avoided, but as the seasons of the year, they do and must hold their courses ; there I would not wish any man to bestow either his labour or his cost, for it is loss of time, and loss of substance : but where it is to be prevented or avoided by industry, or that those over-flowing or Sea-breaches come and happen by casualty or change, as either by the unnaturalness and superabundance of Tides being driven in by the violence and impetuosity of outrageous winds, or by any neglect or breach in the Sea-wall, or other mishaps of the like nature, which hapneth sometimes scarce once in an Age, at the most not above once or twice in many years ; in these cases there is most certain remedy, and the ground so spoiled and wasted, may by art and industry be again reduced and brought to the former perfection and goodness ; nay, many times amended and freed

A true cause
of barrenness.

Where this
annoyance is
incurable.

Where it is
curable.

freed

freed from many faults and sterile qualities, to which it was either naturally addicted, or else by chance and accident grew thereunto, by continual wearing and imployment without rest or refreshing, by the artificial means of wholsom manures, or other strengthenings which ought to be applied before those faults grow in extremities.

Now touching the cure of these grounds which are thus worn out, decayed and made barren by these inundations of Salt-water, the owner thereof is first to draw into his consideration, that as the malignity and evil quality of the earth is grown by too much fretting, gnawing, and wasting of the Salt, so it must be allayed and qualified by a quite contrary condition, which is freshness: the contrary then to Salt-water, must of necessity be fresh-water, so that you are to cast about your judgment, and by the view, situation, and level of the ground (which for the most part can have but little difficulty in it, because these grounds upon which the Sea thus breaketh, must ever be the lowest of all other, so that a true descent coming unto it, and a true ascent coming from it, there is no hardness to convey any water-course thereunto) look how to bring a freshness which may conquer and overcome this fatness, and that must therefore be fresh water, which by channels, ditches, furrows, sluices, and the like, you may bring from any fresh river, spring, pond, or other fresh-water course (though removed some distance of miles from the place to which you would convey it) to the very place to which you desire to have it, and with this fresh water you shall wash and gently drown over so much of your spoiled ground as you shall be able reasonably to deal withal, in other costs and labour for that year; and if you have plentiful store of fresh water, then having (as I said) drowned it over gently, about four inches, or half a foot deep, you shall so let it lie two or three days, then drain away that water by the help of back ditches, or by sluices made for that purpose, which if the situation of the ground deny you, and that there is no such convenient conveyance, then you shall in the lowest part of the ground (either joyning upon some other spoiled ground, or upon the Sea-wall or bank) place a Coy, which may either cast the water into the other ground, or else over the wall

The manner of the cure.

One contrary helps another.

The watering with fresh water.

How to draw away the fresh water.

How oft to
drown the
earth.

and bank into the Sea ; and having thus drained away the first water, you shall then open your sluices of fresh water again, and drown your ground over the second time, and do in all things as you did before, and thus according to the plentifulness of your fresh water, you shall drown your ground, or at least wash it over with fresh water twice a week, before the beginning of the Spring ; and if the Salt-water have lain long, or be but new departed, then you shall use your fresh water, for some part of the Spring also.

Helps, if fresh
water be want-
ing.

Whether brack-
ish water be
wholesome.

Now some may object unto me here, (and it is a matter altogether unlikely) that in some of these places, where these Inundations and Breaches are, it is impossible either to find fresh water, and to bring fresh water unto them, because all the springs for many miles about, being made naturally blackish, and the rivers by the infection of the salt tides, having lost the greatest part of their sweet freshness ; the Question now resteth, whether these brackish waters are wholesome for this purpose, I, or No ? To this I must needs answer, That they cannot in any wise be good for those spoiled grounds, because the earth naturally of an attractive and drawing condition, sucking and gathering unto it self any that is of a sharp sweet, or sower taste, and especially saltness ; so that being covered with those brackish waters, it will draw from them only their salt, (of which it hath too much already) and no part of the freshness which should qualifie and amend it : therefore, if either your ground be thus situated, or your necessities thus unsupplied, it is better, that you rather forbear this labor of washing or drowning your earth, (though it be the first, the speediest and surest cure of all other) than by watering it with infinite and unwholesome waters, rather encrease the mischief, than any way delay it.

The first time
of plowing, &
the observati-
ons therein.

How to mix
earth.

After you have watered your ground, (if it be a work possible to be attained unto) or otherwise neglected, (it being a thing not possible to be found) you shall then about the latter end of *March*, plow up all the ground with a good deep stich, turning up a large furrow, and laying it into lands, raise them up as much as you can, and make them round, then look

of what nature or temper the earth is, as whether it be fine sand, rough gravel, stiff clay, or a mixt earth, or any of these contraries together: If it be a fine sand, either white, red, or brown, it matters not whether, then you shall take any clean earth which is free from these salt washings, being of a mean or small stiffness, and likewise of as mean and little richness, which being digged out of some bank, pit, or other place where least loss is to be had, you shall carry it in tumbrils or carriages to the new plowed ground, and there first lay it in heaps as you do manure; then after spread it over the Land, and being dry, with clotting beetles break it as small as you can possibly; for this hungry Clay being of no rich and fat condition, will so suck and draw the salt into it, that it will take away much of the evil quality, and mixing his tough quality with the loose condition of the sand, they will both together become apt for fruitfulness and generation.

If the spoiled ground be a rough hard gravelly earth, then you shall mix or spread upon it the best and richest fresh Clay you can get, or if there be any such fruitfulness near about you, then with a good blew Marle, for that is the coolest and the freshest, and will the soonest draw out the salt from the gravel, and give it a new nourishment, whereby any Seed shall be fed and comforted which is cast into it.

The mixture
of Gravel.

If the spoiled earth be of its own nature, a stiff and tough Clay, which is but seldom found so near the Sea-shore, then after the plowing you shall mix it, and cover it over with the freshest and finest Sand that you can possibly get, for that will not only separate the Salt from the Clay, and take away the natural toughness and stiffness of the same, which hindereth and suffocath the tender sprouts, so as they cannot easily get out of the earth, but also by lending a gentle warmth, will assuage the cold quality of the Clay, and make it bring forth more abundantly.

The mixture
of Clay.

Lastly, if the same spoiled earth be of a mixed quality, then you shall look whether it be binding or loosening. If it be binding, then you shall mix or cover it with fine fresh sand; if loosening, then with a reasonable rich and tough clay, for so you shall bring it to an open and comfortable temper, making

The mixture
of mixt earth.

it able both to receive, cherish, and bring forth the Seed; which before either too much wet, or too much driness did stifle and bind up within the clots and mould, so as it had no strength to bear it self through the same.

The second
plowing.

When you have covered your Lands with this mixture, you shall then plow it over again before Midsummer, turning the new laid earth unto the old earth, and as soon as that labour is finished, you shall then lade forth your manure or compost unto it, in which you are to have a great care what manure you elect for that purpose, for it is not the richest and fattest manure;

Election of
Manures.

as your Pigeons-dung, or Pullens-dung, Lime, Chalk, or Ashes, your Horse-dung, your shovelings upon High-ways, your beasts hoofs, your Horn shavings, your Hemp-weed, or any other Weed which groweth near the Sedge of the Sea, neither your Oxe, or Cow-dung, though of all before-named, that is the best, which doth the most good upon these spoiled grounds, because they have all in them a strong quality of saltness or sharpness, which will rather add than diminish the evil quality of the earth, but in stead of these, you shall take the mud of dried bottoms of Lakes, Ponds, and Ditches of fresh-water, and the moisture or wetter such mud or bottoms are, the better it is, or straw which is rotted by some fresh water-course, rain, or the like: by no means that which is rotted by the urine or stale of horse or cattle, for that is the saltest of all other; or you may take any Weeds which you see grow in fresh Rivers, Ditches, Ponds, or Lakes, especially those which grow at the bottoms of Willow, Sal-low, or Osier-Trees; or you may take the old rags of woollen cloth, or any other manure which you know to be the woollest or freshest, and with any of these, or all those together, you shall very plentifully cover your ground all over, and immediately upon the covering or laying on, see you presently plow it, land after land; for to give it any long respit after it is spread, the Sun out of his attractive and strong natural will exhale and draw out all the vertue from your manure, and so spoil much of your labour.

The best Ma-
nures.

The ordering
of the Manure

The third
plowing.

When you have thus manured it, and plowed it, you may then let it rest till *Michaelmas*, at which time you may plow it the last time, and then sowe it with the strongest and hardest

Wheat

Wheat you have, of which the white Pollard is the best, and there is no question but if it be safe from a second Inundation, your crop will be both plentiful and rich, and also acquit and pay largely for all your former charges. The second year you need but only plow it as aforesaid, and then sow it with good Hemp-seed, and be assured you will have a brave crop arise thereof; then the third year you shall plow it as flat as you can, still throwing it down, and not raising it up at all, and then sow it with the best Oats you can get, according to the nature and strength of your Country, and be sure to harrow it well, and to break every clot, and make the mould as fine as possible, and the next year after your Oats, lay it for grass, and I dare be bold, it will bear reasonable meadow; yet would I not have you this year to preserve it for that purpose, but rather to graze it with Sheep or Cattle, especially Sheep, of which I would have you lay on good store; for it matters not how near or close to the ground they eat it; for the next year it will become to the fulness of perfection, and be as profitable or more profitable ground than ever it was, and then you may apply or accommodate it for what use they please, either arable, Meadow, or for continual grazing.

The second
year sowing
and third.

Laying the
earth for
grass.

And thus much touching the manner of reducing again, and bringing unto their first perfection, all sorts of grounds which have been over-flowed, or spoiled by Salt-water, or the Sea-breaches, whether it be arable or pasture; as also the enriching or bettering of the same.

Of grazing.

CHAP. XIII.

Another way to enrich barren Pastures, or Meadows, without the help of water.

IF your barren Pastures or Meadows be so seated, that there is no possible means of washing or drowning them with water, you are then only to restore and strengthen them by the efficacy of Manure or Soyl, without any other help, and this may divers ways be done, as by those manner of manurings, which I have formerly treated of. But to go a better, and briefer way to work, and more for the ease and capacity of the plain Husbandman,

Clay manure.

Moorish earth.

bandman, whensoever you shall be posselt of these barren pastures, if the barrenness proceed from sand, or gravel, then some Husbands use to manure the pasture over with the best Clay they can get, first laying it on heaps, then spreading it, and lastly, with clotting beetles breaking it into as fine dust as they can get it, and this labour they commonly perform as soon as they can after Harvest, when the latter spring is eaten, and the earth is most bare; but if the barrenness proceed from an hungry, cold, and dry clay, then the manure is with the best moorish black earth which they can get, or with any moist manure whatsoever, especially, and above the rest, when the Soil that is digged out of old ditches, ponds, or dried-up standing lakes, and this earth must be laid plentifully upon the ground in manure heaps, as aforesaid, that is to say; first in great heaps, then after broken and dispersed over the whole ground; and lastly, broken into small dust, and mixed with the swarth of the ground, and this labour, as the other generally performed after the Harvest, as a time of most convenience, and giving the earth a fit respite to suck in the strength and comfort of the new earth, and also having all the Winter after with his frosts, snows, and showers, to mellow, ripen, and mix together one earth with the other: and doubtless this is a most exceeding good Husbandry, and not to be refell'd or carpt against by any knowing or sound judgment; only it is not the most absolute, or best of all ways whatsoever, but that others may be found somewhat more near, and somewhat more commodious.

The best way to enrich pasture or meadow.

Therefore, whensoever you shall be owner of any of these barren pastures, or meadows, of what nature or condition soever the earth be, whether proceeding from gravel, sand, clay, or pestered with any other malignant quality whatsoever, to reduce it to fertility and goodness in the shortest time, and to the most profit, about the Month of *March*, when all pasture grounds are at the barest, and do as it were remain at a stand between decreasing and increasing, you shall begin then to lead forth your manure for the refreshing of these Earths, and the manure which you shall carry unto these grounds, shall be the soil of streets within Cities or Towns, or the parings and gatherings up of the High-ways, much beaten with travel, also the earth

The Soyl of the streets or High-ways.

for

for two or three foot deep, which lyeth under your dung-hill when the dung is removed, and carryed away, for this is most precious and rich mould, and is not alone excellent for this use, but also for the use of Gardens, for the strengthening and comforting of all sorts of tender plants, and for the use of Orchards, for the comforting both of old and young Trees, when at any time their Roots, are bared, or otherwise when there groweth any milke or decreasing.

Earth under
Dung-hills.

To enrich
Gardens or
Orchards.

You shall also take the fine earty or mould which is found in the hollow of old Willow-trees, rising from the root up almost to the middle of the Tree, at least so far as the tree is hollow, for than this, there is no earth or mould finer or richer.

The mould
of Willow in
Trees.

Of all these manures, or of any one of them, or of as many as you can conveniently get, you shall lead forth so much as may very plentifully manure & cover your ground all over; you shall first lay it on the earth in reasonable big heaps, that the Sun may not exhale the goodness out of it, and then at your best leisure, & so soon as you can conveniently, you shall spread it Universally over the field, dispersing it as equally as you can, unless your field be more barren in one place than in another, which if it be, then you shall lay the greatest plenty where it is most barren, and the less where you find the greatest fertility; yet, by all means, see you scant not any place, but give every one his due; for to do otherwise would shew much ill husbandry.

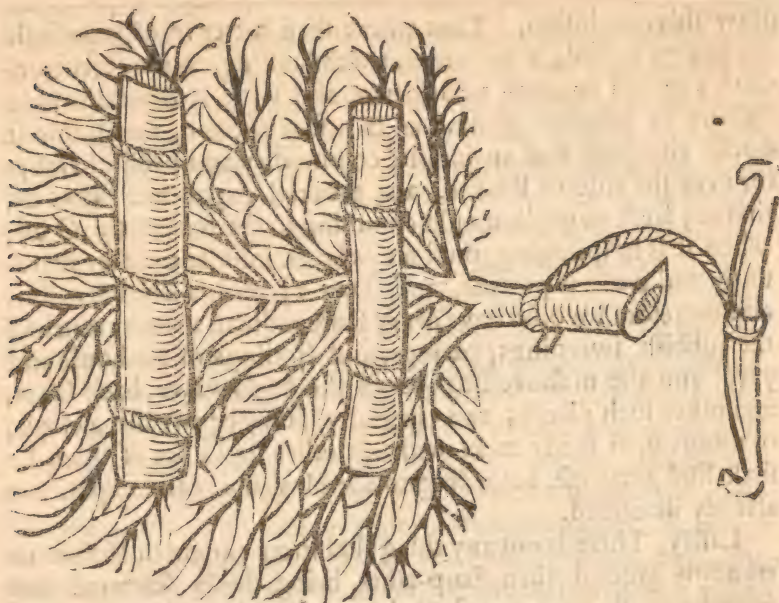
Now it is the use of some Husbandmen, that what mould or earth is laid out from six a clock in the morning, till three of the clock in the afternoon, that they make their Hinds spread in the evening before they go to supper; and questionless it is a very good course, and worthy to be imitated of every good Husband.

After you have laid forth your mould, and spread it all over your pasture or meadow, then you shall make some boyes, girles, or other people, to pick and gather up all the stones, sticks, or other unnecessary matter which might happen to be led forth with the mould, and to pick and lay the pasture so clean as is possible; which done, it is to be intended, that yet notwithstanding this ground will lye exceeding rough, both in respect of the clots of earth, which will not easily be broken, as also in re-

spect of naturall roughness of these rich moulds, which at this time being digged up in the wet, will not easily be separated or dissolved, and therefore when you have finished the labours before said, you shall let the clots rest till the Sun and weather have dried them, then after a ground shower (observing to take the first that falleth) you shall harrow your ground over, after this manner.

**A new way of
Harrowing.**

You shall cut down a pretty big white Thorn-tree, which we call the Hawthorn-tree, and make sure that it be wonderfull thick bushie and rough grown; which done, you shall plash it as flat as you can, and spread it as broad as you can, and those branches or boughes which of necessity you must cut in sunder, you shall again plash and thrust into the body of the Tree, binding them with cords or withs so fast thereto, that they may by no means scatter or shake out, and if any place appear hollow or thin, and cannot come to lie hard, firm, and rough upon the ground, then you shall take other rough bushes and thrust into the hollow places, and bind them from stirring also, till you have made your plash full and equall in all places, and that all the roughness may be as in a flat leuell equally touch the ground; when you have thus proportioned your Harrow, you shall then take great loggs of wood, or pieces of timber, and with ropes bind them on the upper side of this rough Harrow, that the poise or weight of them may keep the rough side hard, and firm to the earth, and then the Harrow will carry this proportion or figure.



To the big end of this harrow, you shall fix a strong rope with a Swingle-tree with Treats, Coller, and Harness, and one Horse is fully sufficient to draw it round about the Pasture or Meadow: so with this Harrow you shall harrow the ground all over, and it will not onely break all the hard clots to a very fine dust, but also disperse them and drive them into the ground, and give such a comfort to the tender roots of the young grasse, that newly springing, that it will double and treble the increase. And for mine own part, this experience I my self have seen upon an extream barren Pasture ground in *Middlesex*, where none of these good moulds or soyles could be got; but this Husbandman was faine to take all the rubbish and coorse earth even to the very sweepings of his yard, and for want of enough thereof, to take any ordinary earth he could get, and with it he drest the ground in such sort as I have now last shewed you, and this being done in *April*, he had in *June* following as good Meadow as could be wisht for, and was the first Meadow I saw cut down in all that Country: from whence I

Of Rubbish
and sweepings.

I 2

draw

draw this conclusion. That where these better moulds or soyls are not to be had, if yet notwithstanding you take any ordinary mould or earth whatsoever, and with it replenish your Pasture or Meadow ground as is before shewed, that without doubt you shall find an infinite commodity, and profit thereby; for even the rule of Reason, and generall experience shews us, that any fresh or quick mould coming to the root of the Grass, when it is in springing, must needs be an infinite comfort thereunto, and make it prosper, and shoot up with a double haste; and therefore I would have every Husbandman to make much of the rubbish, sweepings, parings, and spitlings of his house and yard, and also of shovellings up of the high-ways, back-lanes, and other such places; and especially if they be any thing clayie, or moorish, or sandy mixt with any other soyl; for of them he shall find great use, according to the Husbandry and experience already described.

Of Soap-ashes. Lastly, There is not any thing that more enricheth Pasture or meadow ground then Soap-ashes, being thinly scattered and spread over the same; and this labour would ever be done at the latter end of *April*, for then Grass is beginning to shoot up, and at that time finding a comfort, the encrease will multiply exceedingly.

CHAP. XIV.

How to enrich and make the most barren soyl to bear excellent good Pasture or Meadow.

Two wayes to enrich earth.

TO speak then of the bettering and enriching of these barren earths, and reducing them to good Pasture or Meadow, it is to be understood, that there are but two certain wayes to compass and effect the same, namely, water or manure.

You are then, when you go about this profitable labour, to consider the situation of the earth you would convert to Pasture, and to elect for this purpose, the best of this worst earth you can find, and that which lyes lowest, or else that which is so descending, as that the bottom thereof may stretch to the lowest part of the continent, for the lower that such grounds lye, the sooner they are made good, and brought to profit: Next, you shall con-

sider

sider what burthen of grass it bears, and whether the grass be clean and intire of it self (which is the best and likeliest soyl to be made fruitfull) or else mixt with other worser growths, as Thistle; Heath, Broom, or such like, and if it be burthened with any of these naughty weeds, you shall first destroy them by stubbing them up by the roots, and by burning the upper swarth of the earth with dry straw mixt with the Weeds which you shall cut from the same, then it shall be good for certain nights, both before the first and latter spring, to fold your sheep upon this ground, and that not in a scant manner, but very plentiful, so as the dung of them may cover over all the earth, and their feet trampling upon the ground, may not only beat in the dung, but also beat off all the swarth from the earth, that where the Fold goeth, there little or no grass may be perceived; then whilest the ground is soft, and thus trampled, you shall sow it all over with Hay-seeds, and then with your flat board beetles, beat the ground smooth and plain, which done, you shall then strow, or thinly cover the ground with the rotten sladds of Hay-slacks, and the moist bottoms of Hay-barns, and, over that, you shall spread other strong manure; of which, House-dung, or Horse-dung, and mans ordure mixt together is the best, or for want of such, either the manure of Oxen, Kine, or other beasts; and this manure also you shall spread very thin upon the ground, and so let it lye till the Grass come up through the same, which Grass you shall by no means graze or feed with your Cattell, but being come to the perfectness of growth, you shall mow it down; and although it will be the first year but short and very coorse, yet it skilleth not; for the ensuing years shall it yield profit, and bring forth both so good grass, and such plenty thereof as reasonably you can require; for this is but the first making of your ground, and alteration of the nature thereof: neither shall you thus dress your ground every year, but once in twenty or 40 years, having plenty of water to relieve it. When therefore you have thus at first once prepared your ground by destroying the barren growth thereof, and by manuring, sowing, and dressing it, you shall then carefully search about the highest parts of the ground, and the highest parts of all other grounds, any way neighbouring round about

Of watering
Grounds.

about it, and somewhat above the level thereof, to see if you can find any Springs in the same (as doubtless you cannot chuse but do, except the ground be of more then strange nature;) and the heads of all such springs as you shall find, you shall by gutters and channels draw into those ditches which shall compass your meadow round about, observing either to bring the water into that part of the meadow ditch which ever lyeth highest, and so let it have a currant passage through the ditches down to the lower part thereof, and so into some Lake, Brook, or other channell, and in this sort you may bring your water a mile or two: Nay, I have seen water brought for this purpose, three or four miles, and the gain thereof hath quit the charge in very plentiful manner.

Helps in the
Watering.

But if you cannot find any Spring at all, nor can have the help of any Lake, Brook, River, or other channell of moving water, (which is a doubt too curious, as being cast beyond the Moon) you shall then not onely cast ditches about this your Meadow ground, but also about all other grounds, which shall lye about, and that in such sort, that they all may have no passage but into the upper part of the meadow ditch, so that what rain soever shall fall from the Skie upon those earths, it shall be received into those ditches, and by them conveyed into the meadow ditch: and to augment the store of this water, you shall also in sundry parts of those upper grounds which are above the meadow in places most convenient, dig large Ponds or Pits, which both of their selves may breed, and also receive all such water as shall fall neer about them, and those Ponds or Pits being filled (as in the winter time necessarily they must needs be at every glut of rain) you shall presently by small drains, made for that purpose, let the water out from them into the ditches, and so into the meadow ditch, and so stopping all the drains again, make the Ponds or Pits capable to receive more water.

When and
how to water.

When you have thus made your ground rich with water, and that you see it flow (as in the winter time necessarily it must) in plentiful manner through all your ditches, you shall then twice or thrice in the year, or oftner, as you shall then think meet in the most convenientest places of the meadow ditch; stop

stop the same, and make the water to rise above his bounds, and to over-flow and cover your meadow ground all over, and if it be a flat level ground, if you let the water thus covering it to lye upon the same the space of four or five dayes, or a week, it shall not be amiss; and then you may water it the seldomer. But if it lye against the side of a hill, so that the water cannot rest upon the same, then you shall wash it all over, leaving no part unmoystened; and this you shall do the oftner, according as the water shall fall out, and your water grow more or less plentifull.

Now for the best season or time of the year for this watering of meadows, you shall understand, that from Alhallowtide, which is the beginning of *November* (and at which time all after-growth of meadows are fully eaten, and cattel for the most part are taken up into the house (untill the end of *April* (at the which time grasse beginneth to spring and arise from the ground) you may water all your meadows at your pleasure without danger, if you have water enough at your pleasure, and may spend or spare at your will; yet to do in the best perfection, and whereby your ground may receive the greatest benefit; you shall understand, that the onely time for the watering of your meadows, is, immediately after any great Flux of rain, falling in the Winter, any time before *May*, when the water is most muddy, foul, and troubled, for then it carrieth with it a soyl or compost, which being left upon the ground, wonderfully enricheth it, and makes it fruitfull beyond expectation, as daily is seen in those hard Countries, where almost no grasse grows but by this industry: And here you must observe, that as you thus water one ground, so you may water many, having ever respect to begin with the highest, and so let the water pass out of one ground into another, untill it come to the lowest, which commonly is ever the most flat and level, and there you may let the water remain so long as you think good (as was before shewed) and then let it out into other wast ditches or rivers. And here you shall know, that this lowest ground will ever be the most fruitfull, as well because it lyeth the warmest, moystest, and safest from storms and tempests, and also because what soyl or other goodnes this over-flow of water, or the rain washeth from other grounds, it leaveth

The best season for watering.

leaveth upon this, and so daily encrease the fertility, from whence you shall gather, that at the first making of these meadow grounds, you may bestow less cost of manure and other charges upon this lowest, flat, level ground, than on the higher: and so by that rule also, observe to bestow on the highest ground, and the highest part of the highest ground ever the greatest abundance of manure, and so as you shall descend lower and lower, to lay your manure thinner and thinner, yet not any part utterly unfurnished and void of compost; yet, as before I said, you are to remember, that these meadow grounds need not thus much use of manure (having this benefit of water, and the first years dressing as was shewed in the beginning of this Chapter) above once in twenty years; nay, it may be, not above once in a mans life time.

And here also is to be considered, that the water which cometh from Clay or Marl grounds, being thick, muddy, and puddy, is much better and richer than that which cometh from sand, gravel, or pibble, and so runneth clear and smooth, for that rather doth wash away and consume the goodness of the ground, than any way add strength thereunto.

CHAP. XV.

Of the enriching and dressing of Barren grounds, for the use of Hemp or Flax.

Grounds ill
for Hemp or
Flax.

YOU shall understand, that there are two sorts of grounds, which out of their own natures utterly refuse to bear Hemp or Flax; that is, the rich stiff black Clay, of tough solid and fast mould, whose extreame fertility and fatness giveth such a surcharge to the increase of the seed, that either with the rankness it runneth all into Bun and no rind; or else the seed being tender, and the mould sad and heavy, it burieth it so deep therein, that it can by no means get out of the same: The other is the most vile and extreme barren ground, which by reason of the climate wherein it lyes, is so exceeding sterile and unfruitfull, that it will neither bear these seeds, nor any other good seed. And of these two soyls only I purpose in this place to treat; for which, such soyls as will naturally & commodiously bear these seeds, I have nothing to do, in that I have sufficiently

ficiently written of them in mine *English Husbandman*, and *English Housewife*, which are books onely for good grounds, but this for all such grounds as are utterly held without cure.

To begin then with the stiff black Clay, which albeit it be very rich for Corn, is most poor for these seeds, when you would reduce and bring it to bear Hemp or Flax, which neer unto the Sea-coast is of greater price and commodity than Corn any way can be, especially adjoyning unto any place of fishing, in respect of Nets and other Engines which is to be made of the same, and which being daily wasted and consumed, must likewise be daily replenished; you must first with a strong plough, fit for the nature of such land, plow up so much ground as you intend to sow Hemp or Flax upon, about the midst of *May*, if the weather be seasonable, and the ground not too hard: if otherwise, you must stay till a shower do fall, and that the earth be moistned, then shall you hack it and break the clots in small pieces; then with the salt Sea-sand, you shall sand it very plentifully; but if that be not to be gotten, and that you be very well assured of the natural richness of the earth, you shall then sand it with the best Red sand you can get or find neer unto you, and upon every Acre of ground you thus sand with fresh sand, you shall sow three bushels of Bay-salt, and then plow up again the earth, sand and salt together, which would be done about the latter end of the year, as after *Michaelmas*, and so let the ground rest till seed-time, at which time you shall first before you plough it, go down to the low rocks on which the Sea-beats, and from thence with drags and other Engines, gather those broad leaved black weeds, which are called *Orewood*, and grow in great tufts, and abundance about the shore; and these weeds you shall bring to your Hemp-land, and cover it all over with the same, and then you shall plow it again, burying the weeds within the earth.

Black Clay for
Hemp, &c.

And herein is to be observed, that in any wise you must lay these weeds as wet upon the Land as when you bring them out of the Sea, provided still, that you add no other wet unto them but the salt-water, for so they are of all soyls and manures whatsoever the onely best and fruitfulest, and most especial for these seeds, and breed an increase beyond expectation.

When you have thus plowed over the ground, you shall then hack it again, and then sow it with either Hemp or Flax-seed, which you please, and after it is sown, you shall then harrow it (and not before) and you shall be carefull to harrow it into as fine mould as you can, and this mould is likely to run fine enough, as well by reason of the fertility, as also of the mixture; yet what clots you cannot break with your Harrows, those you shall break with your clotting-beetle, and such like tools; then after the first great shower which shall fall after your sowing, you shall run over your land thus sown with your back Harrows, that is, with a pair of large Harrows, the wrong side turned upward, to wit, the teeth turned from the earth, and the back towards the earth; and if need be, you shall lay upon the Harrows some indifferent heavy piece of wood, which may keep the back of the Harrows closer to the ground, and so go over all the earth, and lay it as smooth and light as is possible, without leaving the smallest clot that may be unbroken. Now if the ground be sown with Hemp, you shall not think of weeding it at all, because Hemp is so swift a grower, and such a poyson unto all weeds, that it over-runneeth, choaketh, and destroyeth them; but if it be sown with Flax or Line, which is a much tenderer seed, and bringeth forth more tender leaves and branches, then you shall watch what weeds you see spring up, and in their first growth pluck them up and cast them away, till you behold your Flax or Line to be grown above the weeds, and then you may let it alone also, for after it hath once gotten height, it will not be over-grown with weeds.

Making of ill
earth bear,
&c.

Now touching the other soyl, which through the extreame barrenness thereof, refusing to bring forth any good fruit at all; you shall in all points dress it, as you dress your plain clayes, described in the second Chapter of this Book, beginning at the same time of the year that is then appointed, or (if more necessary occasions hold you) if you begin later, it shall not be amiss, and then at *Michaelmas* you shall plow it over the second time, and manure it with sea-weeds, and so let it lye at rest till *March* (which is seed time) and then plow it again, and manure it with sea-weeds again, and after the plowing, you shall
hack:

hack it, and if in the hacking you find the earth stiff and tough then you shall harrow it before you sow it, and harrow it again, breaking the earth so small, and laying it so smooth as possible you can, using the help both of the clotting beetles, and all other tools which may be available for breaking the earth and making the mould as fine as any ashes; then after the first great shower of rain, perceiving the ground to be well moistned, you shall instead of the back Harrows (which upon this earth may be too light) take the great rowler which is described in the book of the *English Husbandman*, being a great round piece of timber of many squares, drawn either by Horse or Oxen, but a single Horse is best, both in respect of much treading the ground, as also for the swift going away or drawing of the same: for the swifter it is drawn, the better it breaketh the ground, and the lighter it leaveth the mould: and with this rouler, you shall run over and smooth your ground very well, leaving no clot unbroken, and so let it rest.

As for the weeding of this ground, you shall not respect it at all, for naturally it will put up no weed, the very ground of it self being a very great enemy thereunto, nor shall you need to dress this ground in the form before said, but once in eight or ten years: only every seed time, when you plow it (as you shall not need to plow it at any time, but seed time only) you shall before the plowing, cover or manure the Land with the sea-weed before spoken of, which will give strength enough to the ground, without any other assistance. Weeding.

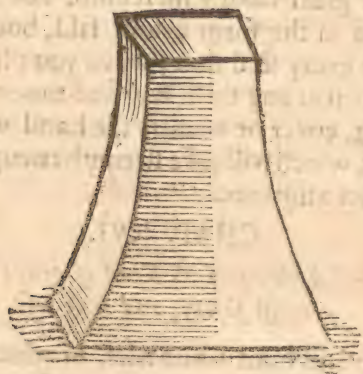
CHAP. XVI.

The manner of stacking of all Kind of grain or pulse with greatest safety, and least loss.

IN these barren and hard Countries, of which I have formerly written, all sorts of buildings are exceeding costly and scarce, both in respect of the clime, which is commonly most extreme cold, mountainous, and much subject to storm and tempest, as also through the great want of Wood and Timber, which in those hard soyls doth hardly or never prosper, and therefore in such places buildings must be both small and dear, so that it will be very hard for the Husbandman to have house-room for

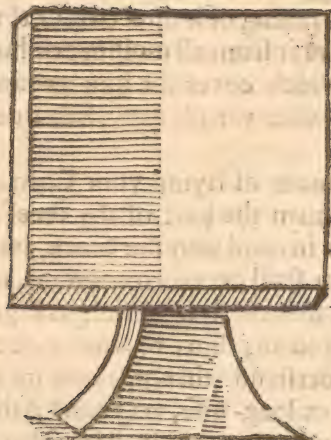
all his corn; but that of necessity he must be enforced to stack much, or the most part of his Corn without doores, which albeit it be a thing very usuall in this Kingdome, yet is it in many places so insufficiently done, that the loss which redounds thereby (partly by the moysture of the ground, which commonly doth rot and spoyle at least a yard thickness of the bottom of the Stack next the ground, and partly through Mice, Rats, and other Vermine, which breeding in the Stack, do eat and devour a great part thereof, as also through many such like negligent causes) is greater than a Husband may with his credit be guilty of, or a profitable Husband will by any means suffer to be lost so negligent.

To shew then the manner how to stack or mow your Corn without doores, in such sort, as neither the ground shall rot it, nor these vermines destroy it, nor any other loss come to it by way of ill Husbandry, you shall first cause four pieces of timber, or four stones, to be hewed broad and round at the neither end; like the fashion of a Sugar-loaf, or this figure.

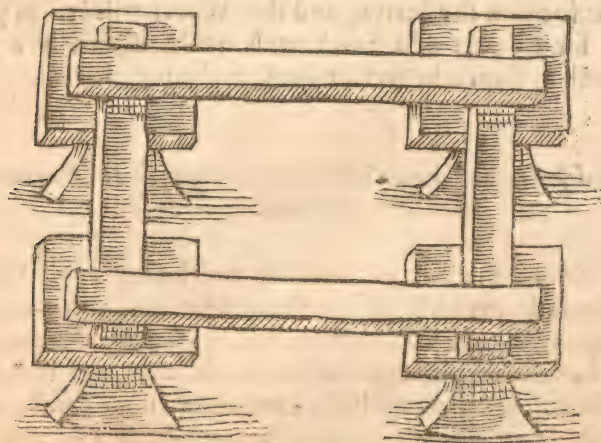


And these pieces of wood or stone shall be in length three-foot or thereabout, and in compass or breadth at the bottom, two foot, or a foot and a half, and at the top not above one foot: these four pieces of wood or stone you shall place in your stack-yard, or other convenient place neer your thrashing-floor,

floor, and you shall place them four square, of an equal distance one from another: then you shall cut out four smooth boards of two inches and a half thick at the least, and full three foot square every way, and these boards you shall lay upon the heads or narrow tops of these stones or pieces or timber according to this Figure.



Then shall you take strong over layes of wood, and lay them four square from one board to another, according to this Figure.



And then upon these over-layers you shall lay other smaller poles close one by another, and then upon them you shall mow or stack your Corn, whether it be Wheat, Barley, Oats, Pease, or any other kind of grain, and be sure if you make your stack handsome and upright, which consisteth in the Art and Workmanship of the Workman, you shall never receive loss in your Corn: for the raising of it thus two or three foot from the ground, will preserve it from all moisture or hurt thereof, and the broad boards which cover the four ground-posts will not suffer any Mice or other vermine to ascend or come into the same.

Now for the manner of laying your Corn into the Stack, you shall be sure to turn the part of the sheaf where the eares of the Corn lye ever inward into the Stack, and the other which is the straw end, you shall ever turn outward, and by that means you shall be assured that no flying Fowl, as Pigeons, Crows, and such like, can do you any hurt or annoyance upon the same: Lastly, you shall understand, that you may make these Stacks either round, square, or long-wise, yet round is the safest, and if you do make them longwise, then you shall set them upon six ground-posts, or eight, according to the length and proportion you would have it, and after your Stack is made, you shall then thatch it very well to keep out the wet; also if when you do Stack your Wheat, you do top your Stack with Oats or other coarse grain, it will be so much the better, and the Wheat will lye in greater safety: for no part of a Stack well made, especially a round Stack, will so soon take wet or hurt, as the top thereof.

CHAP. XVII.

The diseases and imperfections which happen to all manner of Grain.

ALbeit the manner of Stacking and laying up of Corn or Grain in the form before shewed, may to every one give an assurance for the safe and profitable keeping thereof as long as it indureth therein, and abideth in the eare, yet because divers necessities may compell the Husbandman to thrash out his Corn, as either, for present use of Straw, Chaff, Garbage, or other

other commodities needfull unto him (as the season of the year shall fall out) I think it most necessary in this place, to shew how all manner of Grain and Pulse, of what nature soever, may most safely and profitably be kept from all manner of annoyances, or corruptions whatsoever, being a work of that utility and goodness, that not any belonging to the Husbandman doth exceed it : Nor shall it be sufficient to shew the offences and diseases of Grain with their cures and healthful preservations, whilst it is in the Husbandmans possession, but also whilst it is in the earth, and at the mercy of cold, heat, moistness, or dryness, and not onely subject to the malignant influences of Stars and Planets, with the encreasing and decreasing of the Moon and her operations : but also of divers other hurtfull Vermine, as birds, worms, pismires, dorrs, snails, moals, and other such like : some whereof consume and devour the grain ere it sprout, other sprouting when the kernel is rotten, and turned to sweet substance, and others after it is sprouted, by devouring the first tender leaves, before they have any strength to appear above earth, being as it were but soft white threads not changed into the strength of green, because the air and Sun hath not yet lookt upon it.

To begin then with the first enemies of corn or grain, after it is thrown into the earth, there is none more noyfull then *Crows*, *and Choughes*, and other smaller birds, which flocking after the seeds-man will in a manner devour and gather up the grain as fast as it is sown : for as according to the old saying, *That many hands make light work*, so many of their mouths (being creatures that ever flye in flocks together) and their much nimbleness in devouring, soon rob the earth of her store, and deprive the labouring Husbandman of very much profit ; and the Grain which the creatures do most consume, is all manner of white Corn, as Wheat of all kinds, Rye and Oats, as also Hemp-seed, Lin-seed, Rape-seed, and such like : Neither are they only offensive during this time of sowing, but after it is sown and covered, digging it with their strong bills out of the earth, and so making the waste greater and greater.

The prevention or cure of this evill, is divers, as the afflictions of people, and custom of Countries do instruct them : for some

Crows, Pidgeons, and Birds.

The Cure.

some (especially the *French-men*) use when they sow these grains and seeds, first to sprinkle it with the dregs or lees of their bitterest oyles, which when these devouring fowls do taste, they refuse to do any further hurt: Others use to sow Pigeons dung or Lime with their seed, which sticking unto the grain, the unavoriness thereof will make the fowl cast up the grain again, and leave to do further hurt. But forasmuch as these medicines cannot ever be had, nor are ever wholesome for every ground, the onely best and safest means to prevent this evil, is, to have ever some young boy, with bow and arrows to follow the seed-man and Harrows, making a great noise and acclamation, and shooting his Arrows where he shall see these devourers light, not ceasing, but chasing them from the Land, and not suffering them at any time to light upon the same, and these servants are called Field-keepers, or Crow-keepers, being of no less use and profit (for the time) then any other servants whatsoever. Nor is it sufficient to have the Field-keepers for the bare time of seed only, whilst the grain is in sowing, but he shall also maintain them untill such time as you see the grain appear above the earth, which for Wheat or Rye, because they are winter seeds, and so longer in sprouting, will ask a full month; for all other seeds which are sown in the Spring, or Summer, a fortnight is full sufficient: And this Field keeper shall not fail to be in the field an hour before Sun in the morning, and so continue till half an hour after Sun-set in the evening, for at the rising and setting of the Sun is ever done the greatest mischief, for then are all creatures most eager and hungry; and though the indurance may promise much pain and trouble, yet questionless the labour to any free spirit, is both easie, and pleasant.

Additions.

Also if your Field-keeper, instead of his bow and arrows, do use to shoot off a musket, or Harquebush, the report thereof will appear more terrible to these enemies of Corn, and the profit thereof will be a great deal more: for a shot or two of powder will save more Corn, than a weeks whooping and shouting, onely you must observe, that your Field-keeper use no bullet or hail-shot, for so he may turn scaring to killing. Now touching the destruction which these creatures make of Corn after it

is stackt up by tearing off the thatch, and digging holes and pits therein ; to prevent that, you shall cause the thatcher to scatter upon the thatch, great store of ashes of any kind, or else Lime, that as the Pidgeons or Crows tear up the straw, the Lime or ashes will sparkle into their eyes and nares, which they will not indure ; as for those parts of the stack which cannot be thatcht, as the sides and ends ; upon them you shall prick divers scare-crows, as dead Crows, or dead Pidgeons, or any other rags, as the shape of a man, made either of thumb-ropes of hay or straw, or else some old cast-away apparel, stopt with straw, & so fixed on the stack, also in this case you may use Clap-mills, or such-like toys, which make a great noise. But to conclude, the best prevention for these Creatures (if you want ability to maintain a field-keeper) is to take long lines of pack-thread, and in them to knit divers feathers of divers colours, especially white ones, and with little stakes so fasten them over the Corn, that with every breath of wind the feathers may dance and turn about, and the nearer that these blinks or scares come to the ground (when the Corn is new sown) so much the better it is, least the fowl finding a way to creep under them, begin not to respect them ; so that a hand or two from the ground is sufficient ; Provided that the feathers and scares have liberty to play and move.

But if it be to save Corn in ripening, that is to say, a little before it be reapt, when the ears begin to harden, or when it lieth in single sheaf upon the Land, for then fowl and birds do as great mischief, as at any other season, it shall then be fit that you raise these lines or scares upon higher stakes, so as they may play as much above the ears of Corn, as before they did above the earth ; and amongst these scares thus made upon lines in sundry parts of the field, you shall upon other stakes place many other bigger scares, as dead Crows, Pies, Glead, Pigeons, or such like, as also the proportion of a man formerly shewed you, or any rags of cloath being black, fowl, and ugly, like Bakers mal-kins ; and than this, there is no safer way for the defence of Grain or Corn from these Birds, and such like.

The next great devourers or consumers of grain are *Pisinares* or *Ants*, which although it be but a little Creature, yet it is so labour-some, that the grain which they carry away or destroy by eating amounteth to a great quantity, and the mischief which

these little vermine do, after the Corn is covered in the ground, and before it sprout, for they creeping in at the little chinks of the earth, and finding the Corn, either drag it out, or eat it, so that it cannot grow, and the grain which they most hurt, is all manner of white Corn, especially your finest and smallest Wheat, for the skin or hull is thinnest, and the kernel whitest and sweetest : also to barley they do much hurt, especially that which is fullest and best ; likewise to Rye, Hemp-seed, Lin-seed, and Rape-seed ; as for Oats, because it is double hull'd, and also your great whole straw wheat, and polard wheat, which is thick hull'd, their hurt is not so much to them, and unto pulse nothing at all, because they are too heavy, too thick skinned, and bitter in taste.

The Cure.

The best cure and prevention for these Pismires, is, to search your Corn-fields well, especially under hedges and old trees, and on the top of Mole-hills, and if you find any beds or hills of Ants or Pismires, presently after Sun-setting, with hot scalding water to drown the beds or hills, or with wet straw and fire, to make such a smoak upon them, as may smother them to death : also if you manure your Corn-lands with ashes, lime, or salt-sand, you shall be well assured it will never breed Pismires.

Of Dore.

Next unto these, your Dore or great black Clocks are vehement destroyers of all kind of Corn, both white Corn and Pulse, whilst it lieth dry on the earth, and before it sprout ; for after it beginneth to sprout, they do no more touch it, and these Dore destroy it in the same manner, as the Pismires do, by creeping in at the small crevices of the earth, and finding the grain, do as long as it is dry, feed thereon ; and though they are no hoarders, or gatherers together of the grain, keeping it in heaps in dry places, as the Pismires and other vermine do, yet they are great feeders thereon, and that continually : besides, they will ever chuse out the fullest and best Corn, and leave the leaner, whereby they do the Husbandman double injury, as first to devour, and then to devour but the best only.

The Cure.

The cure or prevention for these Dore, or black Clocks, is in Seed-time to make great smoaks in your Corn-fields, which will presently chase them from thence, for they are the greatest enemies that may be to all manner of smoak ; but if that be not sufficient,

sufficient, then immediately before you sowe your Corn, you shall very lightly sowe your Land with sharp Lime, and whensoever the Dore shall find the smell, or taste thereof, presently he will depart; or if he eateth of the grain that toucheth the Lime, it is a present Poyson unto him, and there he dieth.

After these, your field Rats and Mice are very vehement destroyers of all manner of grain or Seeds before they sprout, especially all sorts of wheat, and all sorts of pulse, because for the most part those kind of grains in many Soyls are sown under furrows, and not harrowed, so that the furrows at first lying a little ho'low, these Vermines getting in between the earth and them, will not only devour and eat a great part of the grain, but also gather together great heaps thereof into their nest, as is often seen when at any time their nests are found, some having more; some less, according to their labours.

Of field Rats
and Mice.

And albeit in other Soils where the grain is sown above furrow, and so harrowed in, and laid much more close and safe, they cannot do so much hurt as in the former, yet even with these they will with their feet dig out the Corn in great abundance, and though in less measure, yet do hurt that is unsufferable; so that to conclude, neither Rye, Barley, Oats, nor any other smaller and more tender Seeds, are free from their annoyance and destruction.

Now the Cure and prevention for these Field Rats, or Mice, are divers, according to the opinions of divers Authors, and divers of our best experienced Husbandmen: for some use in the Dog-days, or Canicular days, when the Fields are commonly bare, to search out the holes and nests of these Rats and Mice, which are easily known, being little round holes in the earth, made so round and artificially as if they were made with an Auger, no bigger than the body of the Creature that was to lie in it, and into these holes they use to put a few *Hemlock seeds*, of which when the beasts tastes it is present death unto them: Others use to sprinkle upon the land *Hellebor*, or netting powder mixt with Barley-meal, of which the Mice and Rats will greedily feed, and it is a deadly bane and present death unto them.

The Cure.

Lastly (& which is the best Medicine) if you take a good quantity of ordinary green glass, beaten also to powder, and as much

Copperas or Vitriol beaten also to powder, and mix them with course honey, till it come to a paste, and then lay it in the holes, and most suspicious places, and it will neither leave Rat nor Mouse about all your fields, but suddenly destroy them.

Of Worms.

The next great destroyers of Corn and Grain, are Worms, and they destroy it in the sprouting, then when the ground hath rotted it, and the white or milk substance breaking open the upper husk, shooteth forth in little white threds at both ends, upon which whilst it is so moist and tender, the worm feedeth extreme, and so devouring up the substance or sperm, is the cause the corn cannot grow or get out of the ground, and these worms being as it were the main citizens within the earth, are so innumerable, that the loss which is bred by them is infinite.

The Cure.

Now the cure or prevention for these Worms, is diversly taken; for some Husbandmen use but only to strike into the Plow-
Rest, and under the lowest edge of the shebord certain crooked spikes of Iron of great nails half driven in, and turned back again, with which as the Plow runs tearing in the ground, and turns up the furrow, those pieces of Iron kill and tear in pieces such Worms as are either within or under the furrow that the Plow casts up, and this is sure a very good Husbandry Practice, but not sufficient for the destroying of such a secret hurtful vermine which is so innumerable, and lieth so much concealed; therefore more curious Husbands use besides this help of the Plow, to take Oxe-dung and mix it with straw, and then to burn it up in the land making a great smoke over all the land, immediately before you plow it for Seed, and it is thought that this will kill all the worms which lie so high in the earth, as to hurt the Corn.

Others use before they make either the mixture or the smoke, to wet the straw in strong lye, and then adding it to the dung, the smoke will be so much the stronger, and the Worms kill'd the sooner; or if you sprinkle strong Lye upon your Seed, before you sowe it, there is not any Worm that will touch the grain after: Also if you take hemp and boil it in water, and with the water sprinkle your seed before you sowe it, not any Worm will come near to touch it.

Of Rye not to be wet.

Yet it is to be observed in this rule of wetting your seed corn, that

that by no means you must wet your Seed-Rye, for it is a Grain so warm and tender, that it will neither indure cold, wet, nor stiff ground, insomuch that the Plow-man hath a Proverb, that Rye well drown'd in the Hopper ; that is to say, it must neither be sown on wet ground, nor in a wet day, since present showers are apt to destroy.

Lastly, it is thought that oft plowing your ground in the wane of the Moon is a very good means to destroy both.

Touching that practice which many use, to gather the worms from their lands at Sun-rise, in bright dewy morning, and Sun-set, when the worms couple above the earth, I hold it more fit for small Gardens, than large Corn-fields.

The next great destroyers of Corn, are Snails, and they destroy it after it is sprouted, feeding upon the tender white threds and fions which start from the Seed and would rise above the earth, being the stem or stalk on which the ears should grow (were it not devoured and eaten up by the Snails, and such like Vermine) as soon as it begins to peep up, or as it were to open the earth ; whereby it is driven back and forced to die in the earth : for these creatures sucking up the tender sweetness, deprive it both of life and nourishment.

The Cure and prevention for this evil, is to take the soot of a Chimney, and after your Corn hath been sown a week or ten days, or within two or three days after the first shower of Rain which shall fall after the Corn is sown ; you shall sowe this soot of the Chimney thinly over the Land, and not a Snail will indure to come thercon : Others use (especially in France and those more fertile Countries) to take common Oyl-lees, and after the Corn hath been sown, and is ready to appear above the ground, to sprinkle it all over the Lands, by which means no Snail or such like Creature will indure to come near the same.

The next great destroyer of Corn is accounted the Grasshopper, and he also destroyeth it after it is sprouted, and appeareth above ground as the Snail doth, but somewhat more greedily, for he not only feedeth on the tender white strings, but upon the first green leaves that appear also ; by which means the Corn is not able to spring or bring forth a stem or stalk to bear the

the ear upon, or if it do put forth any, yet it is so small, weak and wretched, that the ear growing on the same, is withered and lean, and the grain dry and blasted, and no better than chaff; nor is there any Corn that escapeth the destruction of the Grasshopper, he generally feedeth on all: first on Wheat and Rye, because they are the earliest, then on Barly and Oats, and lastly on pulse, upon whose leaf and blossom he feedeth, whilst the first is sweet and pleasant, or the other green.

The Cure.

Now the Cure or prevention for these Creatures, is, according to the opinion of some Husbandmen, to take Worm-wood, and boyl it well in water, till the strength of the Worm-wood be gone thereinto, and then wet with that water in the month of May, to sprinkle all your Corn over when the Sun is rising or setting, and not any Grasshopper will come near, or annoy the same. Others use instead of Worm-wood to boil Centaury, and to use the water thereof in the same manner as aforesaid, and find an equal profit in the same: but it is most certain that any bitter concoction whatsoever, used and applied as aforesaid, will not leave any Grasshopper about your field; for any bitterness is such an enemy unto them, that they cannot live where they feel any taste thereof.

Of Moles.

The last offence of living Creatures belonging to Corn or Grain are Moles, which not only feed upon it after it is sprouted, and spindled, by eating up the roots thereof, and so consequently by killing the whole Corn; but also their digging and undermining of the earth, do root up the Corn and destroy it in most wonderful manner, for where they make their haunts, or are suffered to dig, there they will destroy almost half an acre in a day: neither make they choice either of grounds or grain, for all grounds and grains are alike, if the ground be not too wet or subject to Inundations, or over-flows (as for the most part Corn grounds are not) for above all things Moles cannot indure wet ground, or earth of too moist a quality.

The Cure.

Now the best Cure or prevention against these Creatures, is, to find out the trenches and passages, which are most plain & easie to be known by the turning up of the new earth, and digging cross holes in the same, to watch either the going forth, or the coming back of the Mole, and when you see her cast, to strike her

her with an iron fork made of many grains, as eight or six at the least, and so to kill and destroy them, which is so generally known amongst Husbandmen, that it is become a trade and occupation among them, so that it needs no farther description; and the rather, in as much as for three or four pence a score, you may have any ground cleansed of Moles whatsoever.

Now there be some others which have not this art of killing or catching of Moles, which only do take brimstone and wet stinking straw, or any thing else that will make a stinking smoak, and putting fire thereto, smoak all the places of their haunts, and by that means drive them all clean away from the corn lands: many other practises they have, but none so good, certain, and probable as these already declared.

Thus far I have spoken of those offences which proceed from living Creatures, I will not treat of those which come and grow from the influence of the Heavens, being malignant vapours, which striking into the earth, do alter the sweet and pleasant nourishment thereof, and change it into bitterness and rottenness, whereby the Corn is either slain out-right, withered and made lean and unkindly, or else the kernel turns to a filthy blackness, being bitter, dry and dusty, like unto smoak, which the Husbandmen call smuttiness, or mildew. It cometh also another way, as namely, by over-rankness, or too much fatness of the earth, and this hapneth most commonly only to Wheat; for if blackness happen to any other grain, it cometh of blastings, or other malice of the Stars, for rankness of the ground is in Barley, Rye, or Oats only, make them lie flat to the ground, the stalk not being able to support the multiplicity of the ears, and so by that means the grain wanting his true nourishment, grows withered, and of no validity; now that this is most easily to be found out, the rankness of the growing Corn rising as it were in close bundles together, and the deep blackness of the green blade will with small travel shew you.

This to cure and prevent, it shall be good before you sowe your grain, to sowe your land lightly over with Chalk, for that will abate his over-rankness.

There be other malignant qualities which proceed from the influences of the Heavens, or rather from the qualities of the Planets.

Offences from
the influence
of the Heaven.

Of Smuttiness
and Mildew.

The Cure.

Additional.

Planets

Planets or Elements, which do many dangroushurts unto Corn, as namely the Hail, the Lightning, the Thunder, or the Planet-struck, or Blasting, for all which the antient Husbandmen have suggested several Cures : as namely for the Hail, to plant the White-vine, or stick the branches thereof in the Corn-field: for the Lightning, to close a Hedge-Toad in an earthen Pot, and burying her in the Corn-field, or to plant or hang up the feathers of an Eagle, or a Seal-skin, or to set Lawrel therein; for the Thunder, to Ring Bells, to shoot off great Ordnance, or to burn stinking weeds in the Corn-field : And for Blasting, to take the fair horn of an Oxe, and mixing it with dung, to burn it in the Corn-field, or to take the Branches of the Bay-tree, and to plant them in the Corn-field : But, in as much as all these, and many other the like, smell rather of Conjuraton, Charm, or Exorcism, then of any probability of truth ; I will neither here stand much upon them, nor perswade any man to give further credit unto them, than as to the vapours of mens brains, which do produce much, many times out of meer imagination ; and so I will proceed unto those things which are of far greater likelihood.

Of Frosts.

The next evil which hapneth unto Corn or Grain, is that which cometh by frost and sharp-nipping colds, which starving the Root, and binding up all nourishment, maketh the Corn dry, wither, and never prosper ; and, than the violence of the frosts, there is nothing more bitter to Plants and Seeds ; for, even Rasor-like, it cutteth the veins and sinews in pieces, and as sharp needles pricketh the heart of every growing thing : For as the fire which is most hot, when it rageth, burneth, and consumeth all things ; so the frost, which is most cold when it continueth, starveth and choaketh, or stifeth whatsoever it embraceth.

The Cure.

Now the Cure or prevention for those evils which do happen to grain by these great frosts, is as some Husbandmen suppose, to cover the Land over when it is sown with ashes; others spread straw or rotten litter upon their Corn, and not any of them but is sufficient to prevent the worst injury that frost can do.

Mills and Fogs.

The most malignant quality which offendeth grain, is mist and

and fog; which being naughty vapours drawn from the infected parts of the earth, and fall upon the Corn, do not only make the grain leprous, but also infecting the better earth after the kindly nourishment thereof, and as it were distilling corruption in the veins, makes all that depends thereupon most leprous and unwholsom, and thereupon altereth the quality, quite turning sweetness into bitterness, fulness into emptiness, and goodness into badness, to the great loss of the Husbandmen, and the much disreputation of the ground.

Now the Cure and prevention of this evil, according to the The Cure. opinion of all the best Husbandmen, is, to take weeds green, the twigs of bramble, and other brush woods, wet straw, or such like stuff, and binding them up in great bundles, to put fire thereto, making a great and violent smoke, and then taking the advantage of the wind, to walk up and down the field and smoke it, which is thought a certain remedy to take away those inconveniencies which happen by the venom and poison of these mists and fogs.

Now to conclude, of the diseases and infirmities which happen Corn reapt to Corn whilst it is in the field, there is not any formerly spoken wet. of more dangerous, or of vilder quality than the reaping, mowing, or gathering in of Corn wet, or too green, and unhardned; for such moisture, when the Corn is sheaved up close together, or stackt or mowed up, forthwith gathereth heat, and either setteth the Corn on fire, or else the moisture being of less quantity, and not apt to flame, yet it corrupteth the grain and straw, and breedeth a stinking mouldiness or rottenness about it: so that the Grain either becomes dung or dirt, or at least so stinking and unsavory, that it is good for no use or purpose, as is daily seen where careless Husbands gather in their Grain without respect or Government, making the old Proverb, *That haste ever brings waste.*

The Cure and prevention of this evil, is the well-husbanding The Cure. and managing of the Harvett, as first with a careful and well-judging eye to look upon your Corn, and to know by the hanging downward of the ear, looking as it were back to the ground, and by the hardness of the Grain, whether it be ripe or no; then looking to the cleanness of the Corn, as whether it

be full of greenness, as grass, weeds, and such like : or clean of it self without any mixture : if you find there be any weeds mixt with it, then you may reap it so much the sooner, though the kernel be not so well hardned as you would wish : and above all things, have a care never to shear Corn in the rain or wet, no, not so much as with the mornings or evenings dew upon it, but even in the heat and brightness of the day. Then having reapt your Corn so full of grass and weeds, you shall by no means sheaf it, but spreading it thin in the Sun, let the grass wither all that day, which when you perceive to change colour and grow dry, then bind it up in sheaves, and let it lie single a day, that the wind and Sun may get into it, and dry the greens more sufficiently, then lay it in shocks of six or eight sheaves apiece, and in those shocks, turn the ears so inward, that the other bigger ends may defend them from all the rain, wet or dew that may fall upon them : then a day or two after, lay them in shocks of twenty, or four and twenty sheaves apiece, and in those shocks, let them take a sweat : then break them open in a bright Sun-shine day, and letting the air pass thorow them, to dry them, forthwith lead the grain home, and house it or stack it in such sort as was shewed in the former Chapter, and be sure the grain thus ordered and dried can never take hurt : but if the season of the year fall out so extraordinary evil and full of wet, that by no means you can get your Corn dry home, (which although it be seldome seen, yet it is possible to be seen.) in this case you must bring it home as well as you can, and having your Kilne well ordered and bedded, you shall lay as many sheaves thereon, as it can contain, and turning and tossing them over a very gentle fire, by slow degrees, dry them very perfectly as near as you can, with no greater a heat than that which the Sun giveth, and then mow and stack them up at your pleasure, for the air will sweeten them again, and take away all smell or smoke or other annoyance; only observe, not to stack them up whilst the fire or heat is in them, but when they are cold, and so they will be as sweet as may be.

Now it is not amiss that I speak here a word or two of

washt Corn, or the washing of Corn: True it is (as before I have written) that all sorts of Wheat whatsoever are subject either by the rankness of the ground, blasting or else mildewing, to a kind of filthy footy blackness, as is already shewed; and this footy Corn is taken two ways, generally and particularly: generally, if the whole Land be stricken, and no Corn saved, but all spoiled, which is called mildewed; or particularly, where but some certain ears are struck, or some certain part of the grain, as when it is black at both ends, yet full and sound in the midst, and this is called smutcht Corn, being disfigured in part, but not in all. This smutcht Corn, which is stricken here and there, if the blasted ears be not culled out from the other, which to do is an Husbandry exceeding good and very worthy) when it cometh under the flayl, the dust of those black blasted ears will so foul all the rest of the Corn, that it will look black and ill-favoured, and so become unservicable and unmarketable; for the blasted Corn is both bitter and unwholsome: In this case, you must of force wash this Corn, and you must do it in two or three waters, till you see all the blackness quite gone; which done, then drain away your water clean, and laying the Corn on fair window cloaths, or coverlids, lay it in the heat of the Sun, and so dry it again till it be so hard that it will grind: But if the time of the year will not serve for the Suns drying it, then you shall dry it on a Kilo, with a very soft and gentle fire, and then cool it in the air to recover the sweetness again, and then the Corn is as servicable as any other: only for Seed it will by no means serve, both by means of the blasting, which makes the kernel imperfect at both ends where it should sprout, as also the too much drying thereof, by which it is so much hardened, that the ground hath no strength to resolve it; therefore it is the Office of every Husbandman when he chuseth his Seed-Corn, to eschew by all means this washt Corn as a Grain that is lost in the earth, and will by no means grow.

Therefore that you may know washt Corn from all other Corn, and so not to be cozened by any deceit in the ill Husbandman, you shall take it up in your hand, and if the Corn

look bright, clear, and shining, being all of one intire colour, without change or difference, then be sure the Corn is unwasht and perfect.

But if you find it look whiter at the ends than in any other part of the Corn, and that the whiteness is black and not shining, so that there is a changeable colour in the Corn, then be assured that the Corn is washt, and then by no means apt for Seed or increase.

Again, put three or four grains into your mouth, and chew them, and then if the taste be sweet and pleasant, and grind mellow and gently between your teeth, then is the Corn not washt; but if it have a bitterish, or fleshy raw taste, and grind hard between your teeth with much roughness, then hath the Corn been washt, and dried again; and is not good for Seed; also when Corn is more than ordinarily moist, or more than ordinarily dry, both are very ill signes, and shew either imperfect Corn, or imperfect keeping, for the best and good Corn indeed, ever holdeth an indifferent temperature, betwixt driness and moisture.

CHAP. XVIII.

How to keep all manner of Grain, either thrasht or unthrasht, with least loss the longest time; and how to preserve it from all infirmities, and Vermine in the House or Garner.

Keeping of
Corn two-
fold.

TO proceed to the keeping and preserving of Corn and Grain, it is to be understood, that it is to be done two several ways, that is to say, in the Ear, and out of the Ear; in the stack, when it is cleansed and dressed.

Keeping Corn
in the ear or
in the chaff.

Touching the keeping of Corn in the Ear, or in the Stack, there is no better nor safer way than that already described in the sixteenth Chapter, being free from all offences whatsoever, that can come to hurt it.

Now there be others that cut off the Ears of their Corn, and then put them into great Chests or Hutches of wood (such as are very frequent and much used in Ireland, and other Countries where War rageth) and so keep it sweet and good many years:

Others

Others use to beat it out of the ear, but not separate it from the Chaff, and then laying a lear of the Straw more than a foot thick, to lay a good thick lear of the thrasht Corn; and thus lay lear upon lear, till you have made up your stack, in such proportion as you shall think convenient; and this will keep all kind of Corn, or Grain, or other Seeds, sound, sweet, and fit for any purpose, at least a dozen years, or more, as some have supposed, without either too much drying, withering, moistening, or moulding. And surely this is a very excellent way for the storing up of much Corn in a very little room, and may as well be done with Corn as with straw; only it is not to be done in Barn nor House, because Mice, Rats, and other kind of Vermine will work much destruction thereupon, but on a Stack or Hovel made and proportioned in such form as was shewed before in the sixteenth Chapter, and so it will stand safe without all annoyance, as long as it shall please the owner to keep it; sure I am, it will last thus fully twelve years; yet some Authors affirm, it will last fifty years, but that is a space of years beyond my trial.

Touching the keeping of Corn after it is thrasht and drest, it is divers ways to be done, as by stowage or place of lear, as Garners, Hutches, and such like, by labour and industry, as with the shovel, or else by device or medicine.

Keeping of
Corn out of
the Ear or
drest.

For Garners, they be made divers ways. according to the nature of the Country, and custom of the people.

Of Garners.

Some are made with clay, and some trodden with hair, straw chopt, and such like: but these are the worst, and do soonest corrupt Corn; for although they are warm, which is a great preservation to Corn, yet they yield dust, and from that dust is bred fleas, mites, weavels, and other Vermine which do spoil Corn, and make it easily rot.

Others are made of stone and lime, but they are subject against wet weather, to yield forth a moist dew, which corrupteth and rotteth Corn.

Others are made of Brick and Lime, and they are very good against the Weavel, and other small Vermine, but the Lime is sharp, and so consequently very unwholesome for all manner of Grain.

The best Garner that can be made to keep all manner of Grain

ing,

in, is made of playster, burnt, and brought into mortar, and so railing it up with the help of small stones hidden and placed in the midst of the wall, to make both the inside and outside of the Garner of smooth playster, no stone being seen but hidden at least two fingers thick on each side, and all the bottom also must be made of playster; for no floor keepeth Corn so well, of what kind soever it be: and these Garners would be placed as near as you can to the backs, or sides of Chimneys, or as near the air of the fire as you can conveniently; for as there is nothing more cold then plaister, yet it is ever so dry and free from moisture, that with no change of the air or weather it relenteth, but keepeth the Corn ever in one state of goodness, whilst the warm standing thereof is such a comfort in the winter, and the natural coolness of the thing so soveraign in Summer, that the grain ever abideth in one state without alteration.

Now for Hatches, or great chests, bins, dry fats, and such like, they are made of old, dry, and well-seasoned Oak-boards, plain-ed smooth, and close joyned and glewed together, with covers and lids made also very close, whereby little or no air can come in: some of these great Bins, or Hatches, made of dry boards, are made open and without covers, but they are not so good, for the air covering the upper-part of the Corn, and the middle part sweating, breedeth corruption, or mustiness, which hurteth and spoileth the Corn: besides, they are somewhat too warm, and thereby make any green Corn apt to corrupt and smell.

Of Hatches.

Touching the use of Garners and Hatches, they are principally to keep Malt after it is dried, or Barley, which is for the use of bread or meal; and here is to be noted, that the best manner of keeping Malt, is to keep it in the Corn, that is to say, in the dust, and other filth which cometh with it from the Kilne, as thus; when first you lay your Malt on the Kilne to be dried, you know there is at one end a certain sprout, or small thred, which grows from the Corn, and is called the Come, which by the rubbing and drying of the Malt falls away, and leaves the Corn clean, and smug of it self, and when you trim and dress up your Malt for the Mill, is winnowed and cleansed away: This you shall preserve and put altogether into your Garner or Hatch, which

which will be so mellow and ripen your Malt, that in the spending thereof, a peck will go further, than a peck and a half kept of a contrary fashion; and although some are perswaded that this Come or Malt dust, is a great breeder of the worm or weavel, by reason of the much heat thereof, being indeed of the purest of the heart of the Corn; yet it is not so, unless some rankness or moisture do get to the Corn; and then it breeds weavels in infinite abundance, and therefore by all means be sure that your Garners and Hatches do stand exceeding dry, and then there is no fear of the loss of Corn, nor shall you need to dress or winnow your Malt but as you spend it.

Lastly, here is to be noted, that although I here joyn Garners, Hatches, Chests, and Bins together, yet I make them not all of equal goodness; for the plaister Garner is absolutely the best of all, the close Hatch or Chest next, and the open Bin last; yet any, or all, sufficient enough to keep Malt, Barley, or small Seeds, divers years without imperfection.

It is written by some of the antientest Authors, that Wheat hath been kept in these close Hatches or Chests sweet, the space of fifty years; yet I hold the rule somewhat doubtful, both because Wheat of it self, lying so close packt together, is apt to heat and sweat, and that heat commonly turneth to faultiness, and the sweat to corruption; but that it may thus be preserved from worms, weavels, mites, and other vermine breeding in Corn, it is doubtless and infallible.

Now for the preservation of Wheat, which is the most principal grain, of greatest use, and greatest price, and therewithal most tender, and aptest to take hurt, the experiments are divers, as mens fancies, and practises have found out; for some Husbandmen hold opinion, especially the *French* and *Spanish*, That if you take the Lees of common Oyl (so it be sweet) and sprinkle it upon your Wheat as it lies, either in the Garner, or upon the floor, that it will preserve it from all corruption and annoyance whatsoever; nor doth it preserve Wheat only, but all other manner of grain whatsoever; nor doth it preserve Corn alone from mischief but if Corn by casualty be tainted or hurt, it doth recover it again, and brings it to the first sweetness; and if either worms or weavels be bred in it, the Oyl presently
kills

To preserve
Wheat.

kills them, and frees the Corn from that mischief; as for smaller seeds, as hemp, line and rape, this Oyl doth not only keep them long and sound, but also seeds and nourishes them, and makes them better, either for the ground, or for use, either in the mill, or in Medicine.

There be others that use to take Chalk, and beat it to powder, and then scatter it amongst their Wheat, when they put it into the Garner, and have found that thereby their Grain hath been wonderfully preserved from all imperfection; and surely there is great reason for the same, because the driness of the Chalk drinketh up the moisture which sweateth from the Grain, and is the first breeder of all putrifaction: Also it cool-eth and asswageth the immoderate heat which is ingendred in the Corn, by reason of the packt and close lying together.

Again, there be others which use to lay great store of Worm-wood amongst their Wheat, which likewise preserveth it from all annoyances, especially from Worms and Weavels, as also from Mice, Rats, and such devouring Vermine; neither will the Corn corrupt or grow faulty, as long as the Worm-wood remains amongst it. In *Italy*, the careful Husbands use to take a certain dry earth or clay, called earth of *Olinthus*, or *Cerintus*, and this earth they beat amongst their Wheat, and then put it into the Garner or Hutch, and it will keep it sound and sweet divers years together; then when they have occasion to use, with small reeing sives to dress it from the Corn, and so preserve the dust, which will last and serve you many years together, even almost an age; as some have reported, and is at this day to be seen in many parts of *Italy*, and other places.

Again, I have for mine own part seen in the Island of the *Azores*, certain very great large Caves, or pits made under the earth, of the fashion of a *Spanish* earthen Lear, that is to say, great and spacious in the midst, and narrow both at the top and bottom, like a brass Pot, or great glass Vial, and made as smooth within as may be, and in these caves or pits, they first lay chaff, and then their thrasht Wheat, filling it up full to the top, or within a handful thereof, which they fill again with Chaff, and then closing the top with a broad stone, they cover

it over with earth so close and unperceivable, that you may walk or travel over it without any suspicion; and for mine own part, I have myself digged up many of these pits, and found great store of Wheat, both in the High-ways, and other most suspicious places; and surely it is thought, and experience in those places makes it good, that in these Caves or Pits you may keep Wheat as long as you please, as *Pliny* speaketh of, which is an hundred, or an hundred and twenty years, without hurt or putrefaction, either of heat, moisture, worms, weavels, or any other Vermine whatsoever which consumeth or devoureth Corn; yet how I may recommend this experiment to our Nation, I am uncertain, because the much moisture of our Climate, and the cold rawness thereof promiseth a contrary effect; for the great enemies unto grain, are violent cold and moisture, and with us it is very difficult to make any Caverns under the earth but they must be subject unto both: Therefore only to those which live in hot sandy Countries, high and free from springs or waters, or in dry and rocky grounds, where these mines or hollow places may behewed out, as in a main and firm Quarry, I recommend the trial of this practise, with this assurance, that where the ground is fit for that purpose, as any of your sand grounds or gravel earths, as in *Norfolk*, *Middlesex*, *Kent*, and many other sandy Climates; or in rocky situations, as in *Nottingham*, *Bath*, *Bristol*, and such like, you may keep your Wheat good, sound, firm, and free from all annoyances, even as long as you shall please to keep it, both without putrefaction in it self, or waste made by other devouring worms and vermin; but if in a more moist place, as in clay or other mixt earth, which ever is vomiting wet and dewish humours, you are forced to approve this experiment; then you must necessarily lime all your Cave or hollow Mines within, at least half a foot thick with tylesher'd and plaister laid wall-like together, and then the plaister dawb'd at least three fingers thick above all, and so you may keep your Corn as safe and as sound as any hot soyl whatsoever; but without it your Corn will not endure a week without rottenness, foulness, mouldiness, and stinking.

To conclude, having shewed you all the most approved and best experiments for the keeping and preserving of wheat, there

is none better, or so good as this silly plain one, which I will here deliver: and that is, first, as near as you can, reap your Wheat at the change of the Moon; for Wheat which is so reaped, is seldom or never subject to loss or putrefaction (being got in dry, or in husbandry manner ordered and handled) because that Cœlestial body hath such a power and influence in the growth of Corn and Seeds, that as she groweth, so they grow, and as she waneth, so they abate and wither.

And truly for my own part, in my poor Husbandry, I have made this observation, that I have reaped Corn at the beginning of the wane (to mine eye and judgment) great, full, and bol'd as the Plow-man calls it, and within few days after, when it came to thrashing, I have found it most poor, hungry, and small Corn: nor could I give or find any other reason for the same, but that it was reaped in an ill and most unseasonable time: for, on the contrary part, I have ever found that Corn reaped upon the change, being ripe, full, and every way fit for the Barn (and the weather fair and dry above head) it hath never altered; but kept his first and perfect goodness; so that I cannot chuse, but in this case think the observation of the Moon to be a thing of great effect and validity, appointed by God as a second means for our help and profit: when therefore your Corn is thus seasonably and well got in, you shall thrash it, winnow it, and dress it so clean as you can, then carry it up into your Chambers or lofts appointed for that purpose, of whose floors by all means I would wish to be cast of the best plaister; for boards is too hot, and clay is too apt to breed Vermine: On this plaister floor you shall spread your Wheat, not above a foot thick at the uppermost, and so let it lie, observing once in four or in five days at the most, with a large wooden shovel to turn the Wheat quite over and over, and thus doing, you shall be sure to keep it as sweet, sound, and good, as when it first came into the Barn: for neither can the heat, sweat, nor coldness offend it, the first being cooled and tempered by the opening and dispersing; the second dried up by the air which hath free recourse unto it, and the last comforted by the labour and tossing of the shovel, casting it up and down from one place to another: and though some curious Husbands may object, That this manner of keeping Corn drieth

it somewhat too much, and thereby disableth it for some particular purposes, as for seed and such like: yet in that they are much mistaken; for this stirring and moving of Grain, is not a drying of it, but rather a great comforter and strengthner of it, dispersing back into the Corn, those wholesome vapours which should do it good (by way of communication and fellowship with the Grain) and expelling those ill humors which sweating out of it would otherwise confound and hurt it, so that in conclusion, for the true and long keeping of Wheat sweet, sound, and perfect, without loss or corruption, there is no way more safe or easie, than this last expressed, being of all other the best, although in shew it appear sleight and trivial, as for the most part things of the greatest moment in this nature do: but to the judicious Husbandman I refer it, whose aim is at the worth and substance, not at the words and curious gloss, set forth in strange ingredients.

Touching the keeping of Rye, or Maslin, or, as some call it, Munck-corn, or Blend-corn, being part Rye, and part Wheat mixed together, that which preserveth Wheat, will also preserve it, for they are Grains of like nature, only the Rye is somewhat hotter and drier, and therefore will endure somewhat more moisture: yet to speak particularly touching the preservation of Rye, there is nothing better than the plaister floor, and oft turning; the close Hutch is also exceeding good, so is the Pipe or dry fat, but being once opened, and the air entering into the Corn, except it be soon spent, it will soon putrefie; for though in the close keeping, it last long, yet when it comes to the air it will quickly receive taint. Lastly, for the profit in keeping of Rye, indeed there is nothing better than to ply it, and tread it hard into Vessels or Barrels, wherein salt hath been much lodged, or other brine or salt matter: provided always that the Vessels be sweet and untainted, no ways subject to faultiness or other unsavoury smells, from which there is no preservation.

Concerning the preservation and keeping of Beans, which are indeed a more gross and fatter Grain than any heretofore written of, and out of the fulness of their substance, more subject to moisture and those dankish humors which corrupt Corn:

To preserve Beans.

The careful Husbandman observeth two Rule, first, not to thrash any Beans or Pulse, more than for necessary use (as for the Stable or Mill) before it be middle *March*, at which time the Grain, having taken a kindly sweat in the Mow, Stack, or Hovel, is become so dry, firm, and solid, that no floor, wall, or other place of Lear can make it relent, or give again (except great abuse, and too moist keeping) for it is to be understood, that this sort of Pulse or Grain is of it self so exceeding moist and apt to sweat in the Mow, that all Husbandmen endeavour by no means to house it, or lay it within doors, but seek to make it up in stacks and hovels without doors; not so much that house-room is wanting, as that the benefit of the Sun, and Air, which pierceth through the same, drieth and ripeneth the Corn in such kindly manner, as maketh it as serviceable as any other: and indeed, the first invention of stacks, hovels, reeks, and such like, did not spring so much from the want of housing, as from the good and profit which the Husbandman found to accrue to this kind of Grain, only by reason of laying it abroad; for it is certain, that Beans and Pease neither grow together, nor ripen together, but put forth their increase one after another; for you shall see upon one stalk, blooms, swads and ripe cods: so likewise in the gathering of Pulse (when it is reaped from the ground) you shall see some dry and withered, some ripe, some half ripe, some absolutely green, and as but now in growing.

Now all these must be reapt together, and if you stay them in the field till all be of like driness, questionless the oldest will shake and shed upon the ground before the youngest be ripened, and what that loss will redound to, every Husbandman can judge: So also to house and mow up in a close mow, the dry Pulse with the green, surely the green cannot chuse but inflame and heat the dry, and the dry so heated to give fire to the green, till both be either rotted or consumed; and hence it came, that expert Husbandmen devised to lay their Pulse, for the most part, ever without doors, in stacks, reeks, and hovels, that the Sun and wind passing thorow them, might bring all the grain to an equal driness and hardness.

Again, Pulse being of all grain the coarcest and fullest of substance

stance in it self, and the straw ever big and substantial, and full of broad thick leaves, ever moist and suppy; it must needs follow that this grain must ever be most apt to sweat in the mow, and so necessarily craveth the greatest store of air, and the longest time in drying; so that to return to my first purpose, it must needs follow, that no Beans or Pease can be ripe or seasoned in the mow, till it be mid-March at least; for it is an old saying, among the best Husbands, *that a March wind is salt which seasoneth all Pulse*: And if use or necessity compel men to thrash their Pulse before that time, the Grain is so imperfect, that it must be Kilne-dried, or else it is fit neither for the use of Bread nor Provender.

Now herein is to be understood, that Pease or Beans which are Kilne-dried, may be kept sound, sweet, and good, either on plaister-floors, boarded-floors, or earthy-floors, the space of many years, without turning, or tossing; nor need you to respect how thick the heap lie, since Beans after they are once dried on the Kilne, or in the Sun, never after will thaw, give again, or relent, but remain in their first soundness: But if you preserve your Beans for other uses, as to boyl in your pot, and feed your Servants withal, as is used in *Somersetshire*, and many other Westernly parts of this Kingdom, then it shall be good for you to take Oyl-barrels, Oyl-cask that is sweet, and first calk them all over within and without with ashes, and then put your Beans therein, and close up the heads, and as it is affirmed by divers great Authors of Husbandry, it will keep Beans sound, sweet, and good, twenty years; nay, some give instances of Beans which have been thus kept and preserved the space of one hundred and twenty years; and surely I am perswaded that if Beans be well and dry got, at thrasht at a seasonable time of the year, as in *March, April*, that thus kept, they will last the uttermost of a mans pleasure.

Now for the keeping or preserving of Pease or Fetches, which of all other Grain whatsoever, is most subject to rottenness and imperfection, because out of its own nature it is apt to breed Worms, Weavels, and Mites, by reason of the much lushiousness and sweetness of the kernel of the Grain: you shall in all things observe the same courses that you do with your
Preserving of Pease or Fetches.
Beans,

Beans, both touching your gathering, drying, stacking, and also thrashing; for as they are most apt to go together, being near of nature and condition one to the other, so it is fit that you do apply unto them one and the self same Medicine or remedy.

And herein is to be noted, that as Pease are of more general use then Beans, as for Horse Provender, feeding of Swine, Pidgeons, Pullens, and such like; as also for Bread, Pottage, to boyl with or without meat; for certainly, it is a most wholesome and strong food, as may be seen by the people of *Devonshire*, *Cornwal*, and *Somersetshire*, of whose great strength of body not any reason can be given more probably than their much feeding on this grain, and their acquaintance with much and strong labour: So they ought with more care and circumspection to be preserved from all those annoyances that naturally are apt to hurt them, as worms, rottenness, mould, mustiness, and such like.

And first, there is nothing better for the long and well keeping of Pease, then the very well drying of them, either in the Sun, or on the Kilne, especially those which you use for Bread, Provender, or feeding of Swine: and although some Husbards use to feed Swine with undried Pease, nay, many times both undried and undrest, that is to say, the Pulse or Chaff not taken away; and are of opinion that the Grains so given, sooner feedeth and fatteneth up Swine than the other, yet they are deceived; for albeit it swell and puff up a Beast, yet is the flesh and fat neither so good, sound, and long lasting, as that which is gotten with dry food, nor doth it make a Swine so thirsty; and the Husbandman is ever assured, that when his Swine drinks not well, he feeds not well: therefore what Pease you keep for Bread, or feeding of Cattle, by all means dry them well, and lay them either in Garners or Floors, and they will last sound and good without breeding worms or weavels, as long as you please. But those which you keep for food at your own Table, as in Pottage, or other uses, must by no means be too much dried, because then they ask a double time in boyling, and spend a double quantity of fuel in their preparing.

Some use after they be clean thrasht and drest, to lay them in a cool close Garner, either of Plaster, Earth, or Boards, of which Plaster is the best; as for any thing that relenteth, or yieldeth moisture, as lime, stone-walls, or such like, it is most hurtful, and immediately maketh Pease mould and rot: also it is good to lay your Pease in thick heaps in your Garner, for that will preserve them moist the longer time; but to spread them thin upon the floor, by which means the Sun, Air, and Wind may pass thorow them, is not so good, for it drieth them too sore, and taketh from them much of their sweetness and goodness, which ought most carefully to be preserved. There be others which preserve these tender meat Pease by thrashing them up, and then letting them lie in their own Pulse or Chaff, and not dressing them, but as they have occasion to use them; and questionless this is a very good and laudable way; for the Pulse and Chaff doth maintain them sweet and moist, and yet keepeth them withal so warm and comfortable, that they last much longer, than any other way whatsoever; and in this manner of preserving Pease is to be noted, that by all means you must let them lie upon a dry earthen floor, so long as they are in the Chaff, rather than on the board, or on Plaster, and yet in this case the boards are better than Plaster.

Lastly, and which indeed is the best experiment of all other, if you intend to keep Pease any extraordinary long time, you shall take Barrels or dry Casks, well and strongly bound, and pitch them within exceeding well with the best Pitch or Bitumen that you can get, and then sprinkle the Pitch all over with strong Vinegar; then take your Pease, being clean and well drest, and put them into the Barrels, pressing them down close and hard; then head up the Barrels, and let them stand dry and cool, and they will preserve your Pease sound, sweet, and good for any use whatsoever, as long as you please, be it for ten, twenty, or thirty years, according to the opinions of ancient Husbandmen, and other Provant-Masters, that have lived and commanded in Towns besieged, and Towns of Garrison; neither shall any worm, mite, or weavel ever breed in it, or offend it; nay, if any have in former times

Preserving of
Lentils or
Lupins.

time been bred in them, this manner of keeping the grain killeth them, and destroyeth them for ever.

Now there is another sort of Pulse, which are called Lentils or Lupins, which albeit they are not so generally used for the food and sustenance of man, yet they are for Horse, Swine, and other Cattle, as much in request as any grain whatsoever, and indeed do feed fatter, and sooner than other ordinary Pulse, and the flesh so fed, is sweeter and pleasanter both to the eye and to the taste, than that which is fed with Beans or Pease; also they are a Pulse very Physical and good for many Medicines, as may appear by the works of many learned Physicians; and these the longer they are kept, the better they are, and fuller of profit. To preserve them in good and sound estate, it is meet to reap them in very fair weather, and to stack them up exceeding dry, and if they be laid in the Barn, or any close house, it is not amiss, for they will indure housing better than any other Pulse, yet the sooner you beat them out of the straw, or thrash them up, the better it is; for Husbandmen suppose there is no greater hurt to this kind of Grain, than the long keeping it in the straw; for it is of such rankness, that the very straw and cods breed in it much putrefaction; and I my self observed both in *Spain*, and in the neighbouring Islands, where is great abundance of this kind of Grain, that they do no sooner gather it and bring it home, but immediately they thrash it; nay, some thrash it in the fields upon the Lands where it grows, and so bring it home, and then spread it on fair boarded floors in very great heaps, or lay it up in close Hatches, or Bins, such as wheat, and other white grain is to be kept in. If you dry this kind of Pulse in the Sun, or upon a kilne, with a very moderate and soft fire, and then lay it up either in a close Garner, or close Hutch, it will last many years sound, good, and without corruption. There be other Husbandmen which mix with this grain, when it is thrasht, a half part of hot, dry, white sand, or at least cover the whole heap of pulse with the sand, and do find that it keeps the grain very sound and good many years together. But to conclude, if you take strong vinegar, and a good quantity of *Laserpitium*, dissolve and mix them very well together, and then having laid your Lentils or Lupins together on

a fair boarded floor, in large, broad, and flat heaps, about two foot, or two foot and a half thick; with the vinegar and *Laserpitium* sprinkle over all the heap, and not any change of weather, frosts, worms, or other vermine shall do them hurt, but they shall remain sound and good as many years as you please to keep them: there are other Husbandmen, that instead of this before rehearsed, take only sweet Oyl, and sprinkle it all over the Grain, and find the same vertue and effect, for neither worms nor other Vermine will touch it, nor will the radical humour thereof at any time waste or decay, but remain strong, full, and sound, without any kind of diminishing; nor shall you find any abatement of it, or shrinking in the measure, but that which was a bushel this year, will be also a bushel the next year, and as many years after as you please, which is no small profit to the owner.

Whereas on the other part, if the Grain be either dried in the Sun, on the Kilne, or by the Wind, you shall hardly have of every such bushel so dried, three pecks and a half again, which is by computation at every quarter, which is eight bushels, full one bushel lost, and yet this purchase thus preserved, as before said, shall be as good for any use whatsoever; fit for such Corn to be employed in, as any other dried grain whatsoever, and yield as much every way, and altogether as good meal, and as good meat.

Now touching the preserving and keeping of Oats, it is to Preserving of
 be understood, that of all grain it is least casual, because of it self Oats.
 naturally it breedeth no evil vermine, and is again preserved and defended with a double Husk, whereby neither cold, moisture, heat, nor driness, is able so soon to pierce and hurt it as other grains, which are more thin clad and tender; yet because it is of great and necessary use both for Cattle and Pullen, and that neither the Husband nor Housewife can well keep house without it, you shall know, that the best way to preserve it longest, is, after it is thrashed, to dry it well, either in the Sun or on the Kiln, and then either put it in a close Garner, or close Cask, and it will keep many years sound and sweet.

Touching the preserving of Oatmeal, which is the inner Kernel of the Oats, and a grain of most special use in the Hus-

band-

bandmans house, as in his Pottage, in his Puddings, and in many other meats necessarily used for the labouring man; it is an experiment not altogether so curious as any of the rest formerly written of, for no Oat-meal can be made, but the Oats must be exceedingly well kiln dried, or else the kernel will not part from the hull, and being dried, as is fit, that drying is sufficient to keep and preserve the Oat-meal divers years.

Provided ever, that presently after the making of your Oat-meal, you put it into dry close Cask, or dry close Garners (but Cask is better) and so that it may remain exceeding dry, (for any thaw or moisture corrupts it) and as near as you can, let it have (if it be possible) some air of the fire, for the warmer it stands, the better and longer it will last, as experience sheweth.

Preserving of
any meal.

For the preserving and long keeping of any sort of meal, there is no better way than first to boulte and searse him from his bran, for the bran is very apt to corrode and putrifie the meal, and to bring it to a faultiness or mustiness: then into very sweet and clean dry cask close and well bound, tread in your meal so hard as you can possibly tread it, and then head it up close, and so you may either keep it by land or water so long as you please, and when you have any occasion to spend of it, be sure to loosen no more of the meal than you presently use, for the faster and closer the meal lieth together, the longer and sweeter it will last, for it is the gathering of the air that only corrupts it.

And here is also to be noted, that you should not presently as soon as your meal is ground, boulte it from the bran, but rather let it lie a week or fortnight in the bran, in some close bin or trough, and then after that time boulte or searse it, and you shall find it to afford you in every bushel, more meal by at least half a peck, than if you should presently boulte it as soon as it comes from the mill; whence it proceeds, that the cunning and skilful Baker will ever have a week or fortnights provision of meal before hand, which lying so long in the bran, pays double interest for the continuance.

Now if it fall out so, that either by trade or merchandise, or other occasions, you buy any meal by way of transportation, which is caskt up, (as much meal is sold by the barrel) you shall presently as soon as you have bought it (if it be for your own use

use or expence) break open their heads, and empty the meal upon fair sheets on a clean floor, and then spreading it abroad, let the Sun and Air pass thorough it, which will dry up the sweat; and if there be any taint of faultiness, take it away, and bring the meal to his first sweetness, and then immediately bould out the coarse bran, and after, as was before declared, tread it hard into fresh and sweet cask; and thus you may keep your provision of meal all the year long: nay, if need require, two or three years; for after the first sweat is taken away, and kindly dried, there is no doubt to be made of any that shall follow after.

Lastly, touching the preservation and keeping of all manner of small seeds of what nature and quality soever they be, whether Hemp, Lime, Rape, Mustard-seed, or any other Garden-seed whatsoever, though truly and properly they last but one year, nor are fit for Seed or Increase after that date expired: yet in as much as they are medicinable after, and a much longer time; therefore you shall understand, that the best way to keep them safe and sound, and fittest for use and profit, is, first to gather them as soon as you perceive them to be ripe, and the weather being bright, clear and dry, then you shall dry and wither them in the shade, and not in the Sun, especially upon a plaistered floor, where the Sun looketh to the South, and be sure that as little Sun and moisture come to them as you can, for both are main enemies; which done, bind them up in bundles without thrashing, and so hang them up, and keep them in their own cods, and they will last for all uses, a full year, and for some particular uses two or three years; and in this manner you may also preserve all manner of herbs, weeds, flowers, roots, and the barks or rinds of all manner of trees.

Preserving of
all small seeds.

C H A P. XIX.

How to keep Grain, either for transportation by Sea, or for use in a Town of War or Garrison, from one year to one hundred and twenty.

TO speak of the Grains and Pulses which are meetest for the Sea, and their several uses.

The use of
grain and
Pulse at Sea.
Of Rice and
the Use.

It is to be understood, that the best and principallest Grain which is indeed both most sweet, most fresh, most pleasant in taste, and most lasting, is Rice, which although it grow not much in our Kingdom, but that we are beholden to our good Neighbours for the trade thereof, yet it is in such plenty where we fetch it, that we need neither complain of the scarcity, nor the cost, and so much the rather, in that a peck thereof will go further then a bushel of any other Grain : Of this Rice is made many good and wholsome dishes, some thick, some thin, some baked, some boyled, as thus : If you take a quarter of a pound of Rice, and boyl it in a pottle of water, till it come unto an indifferent thicknes, and then put it into a good lump of potted or barrellled butter, and as much Sugar as shall salt-wise season it to an indifferent sweetnes, it is a dish of meat meet for an Emperour at Sea, wholesome, good, and light of digesture, and will be as much as four reasonable men can well eat at a meal ; for the nature of Rice is such, that it will swell in boyling, and grow to that bigness, that in an instant it will thicken a pottle ; some use the night before they boyl it, to steep it in so much water, as will only cover the Rice all over, and then the next day boyl it in a pottle of water or more, and the Rice so steeped will so swell, that all the first water will be drunk up, and a great deal of less boyling will serve to make it ready ; and sure, than this a man cannot find a cheaper way to feed men, since one pint of water, and the fourth part of a quarter of pound of Rice (which come not to above half a penny at the dearest reckoning) is a meal sufficient for a mans eating, having Bisket and Drink proportionably. And this dish of meat being thus thin boyled, is called Sea-Lob-lolly, and after salt feeding, is wondrous wholesome and comfortable to any man whether he be sick, sound or diseased, and both abateth infirmities, and hasteneth the healing of all wounds.

There be others, that after they have steeped this Rice (as afore-said) do then boyl it in like manner, till it be so thick that a spoon may stand upright in it, and no liquidness of the water perceived ; then put a good lump of butter into it, and boyl it with it, and stir it about, and it will make it come most clean out of the pot in which it is boyled ; then season it with

Sugar.

Sugar, and a little Cinnamon, and it will be a dish of meat right good and delicate, and meet for any man of what Quality soever, that is worth goodness or preserving; nor need the quantity exceed the proportion already prescribed.

Again, if you have Meal in the Ship, if you take of this Rice steeped in water, and a little lightly boyled and seasoned with Sugar, Cinnamon, and Ginger, and a good quantity of Butter, and then bake it in little Pasties, you shall find it a most delicate pleasant, and wholesome meat, and that a penny in it shall go further, and give better contentment than four penny worth of Beef, Bacon, Fish, or any other hard salt meats; yet I do not with any man of Ship-board to make this a continual feeding dish, for then it is both too pleasant and too strong, and where evacuation of some humours are wanting, may breed inconveniences in strong bodies; but rather use it once a week as a Physical nourisher, or for the comfort of sick and diseased men, whose stomachs are tane away, or else weakned; there may be made also of this Rice in time of necessity (being ground to a fine meal) an excellent good Bread or Rusk, which is pleasanter, sweeter, and much longer lasting than any made of Wheat, or any other Grain whatsoever; besides many other Seeds, which would in this place shew but too much curiosity to repeat.

The next Grain unto Rice, which is of estimation and great service at Sea, is wheat, of which although there be divers kinds, yet they are all alike for the serving of this purpose; only the large and thick hull'd wheat being well dried will last the longest, but the small and fine skinn'd Wheat yields the purer flour, and makes the better Meal: Now of this Wheat is made divers dishes of meat, for some take it; and bruise or beat it in bags till the upper skin be beaten off; and then having dress'd and winnowed it, boyl it in clean water till it burst, and grow as thick as Pap, then take it from the fire, and being hot, put it into several dishes of wood, or trays, so much in every dish, or tray, as may serve four men, and so let it cool, then give it to the sick or sound as you shall be directed, and it is an excellent good meat, either cold or else hot, and a little butter melted with it, or being again boyled in fresh water, and seasoned with Salt and a little Sugar, it makes an excellent Grewel, or Loblolly, which is a very sove-

Wheat, and
the use.

reign at Sea. Also your parched Wheat is a very good food at Sea, and of much request and estimation, being sprinkled with a little salt; and of this food a little will serve a man at a time, by reason that the much sweetness thereof soon filleth and cloyeth the stomach, yet it is wondrous light of digestion, and breeds great strength, and much good blood, as we daily find by experience.

Of Oat-meal
and the use.

The next Grain unto this which is to be recommended to the Sea (and which is indeed not any thing inferior to either of the other going before, both for strength and lasting) is Oat-meal, which by reason of the great driness, and drying thereof, feels little or no imperfection at the Sea, as being unapt to suck or draw in any of the ill or moist vapours thereof. Of this Oat-meal is made many good fresh, and comfortable meats at Sea, as Grewel, or Lob-lolly, by boyling it in fresh water, and seasoning it with Salt, and (if you have it continually) sometimes with Sugar and a few Currants, and a little Mace, which is meat of great strength and goodness, especially for such as are sick and weak; for it is a great restorer of nature, and a purger of the blood; also to steep the whole Grotes of Oat-meal a night in water, and then draining them, and putting it in a bag, boil it till the Grots break; then putting it out of the bag, butter it with butter, and it is excellent food; as also boyling Oat-meal in fresh Water with Barm, or Dregs, and the hinder-ends of your Beer-barrels, makes an excellent good pottage, and is of great use in all the parts of the West-Country, especially where Mariners or Sea-men live, and are called by the name of Drousson pottage. Also, of Oat-meal is made that meat which is called in the West, Washbrew, and may be made at the Sea at your pleasure, being a meat of that great account amongst *Devonshire* and *Cornish*-men, that they will allow it to be a meat of singular great strength and goodness, and withal so light of digestion, that a man can very hardly surfeit upon it at any time; and I am the rather induced to believe the same, because I have observed and seen many of the labouring men of that Country to eat such an unmeasurable quantity thereof, that in mine eye one mans Supper would have served a whole family.

But

But you will say, Hunger and labour are such excellent Sauce, that they digest any thing.

To that I answer, That I have seen Gentlemen and Gentlewomen of that Country, of whom as much curiosity hath attended, as is liable to the City; nay, such as have had sicknesses their best familiar, yet eat of this with great and sharp appetite, and when health was most to be feared, then to boast of most soundness. This *Wash-brew* is to look upon like Painters Size, or new made Jelly, being nothing but the very heart of the Oat-meal, boyled and drained to that height and thickness, having neither Hull nor Bran in it, but the pure Meal and Water, and is to be eaten either with Wine, strong Beer, or Ale, or with clarified Honey, according to mens stomachs and abilities. Now this the eaters thereof affirm, that by no means it must be chewed, but rather swallowed by the spoonful whole, because chewing like a Pill makes it taste unpleasant. There is again another meat to be made of Oat-meal, which is called *Girt-brew*, and is somewhat more coarse, and less pleasant than *Wash-brew*, having both the bran and hulls in it, yet it is accounted a food of a very good strength, and exceeding wholesome for mans body; and of my knowledge much used and much desired of all labouring persons that are acquainted with it: Many other foods there are to be made of Oat-meal, but these shall be at this time fully sufficient.

The next Grain to this I account Barley, which may be every way used like unto Wheat, either to make Grewel, or to be creyed, parcht, or boyled; and for Barley for this purpose of food, the best is French Barley, the next is Barley-big, or bear-Barley; and the worst are the spice or Battledore-Barley, and our common English Barley.

And as Barley or Wheat, so you may use your Buck, and your *Indian Siligo*, for they are of like nature, only they are a longer time in their beating, steeping, and boyling, because they are naturally more hard and more dry, by reason of the heat of the Climate in which the best grow; and it is ever to be observed for a Rule, that the drier you keep your Corn at Sea, the better it is, and sweeter, and longer lasting.

Of Pulse, and
first of Beans.
The use.

Now having shewed the use of these lighter grains, I will come to Pulse, and shew their use and benefit at Sea, or in besieged Towns : and of Pulse, I will first speak of Beans as a principal food, wholesome and strong, and though not so fine and light of digestion as of any of the former, yet exceeding hearty and sound, and a great breeder of good blood : They are for the most part to be boyled whole, till such time as they appear soft and tender, or begin to break, and then drained from the water are served in Trays, and well salted, and so eaten ; a pottle whereof is thought a full proportion for four men : and of these Beans there are divers kinds, as the common Garden-bean, or the French-bean, which is great, broad and flat, and these are the best to boyl either with meat, or by themselves, and ask the least labour, because their outer skin is most tender, and the inward substance most apt to be molified and softned ; they may also be boyled when they are young and green, and when they are old and dry, and the meat at both times is good and savory.

The French-
bean.

The Kidney-
bean.

The next Bean to these are the Kidney-bean, which is flatter and lesser, & nearer the proportion of a Kidney, than the French-bean is, and this is also a Garden-bean, and whilst it is young and green is to be eaten Sallet-wise after they are boyled, both the Cod and Bean together, and it is certain, a better Sallet cannot be tasted ; for the Cod or Husk is every way as excellent in taste as the Bean is ; but after they grow old and dry, and that the moisture is gone out of the Cod, then it is meet to thrash them, and boyl them like the French-bean, and they are every way as good meat, and as soon boyled, and as tender.

Common-field
Beans, the use.

The next Bean to these are your common and ordinary field Beans, which having tough and hard skins ask more boyling than the other beans, and are somewhat harder in taste, yet a good sound food also ; there be many that parch them in the fire, and think them then the best meat, because the fire sooner breaks the skin, and softneth the kernel ; because they cannot be done so abundantly, and therefore are not so much in use.

Of Pease, and
the use.

After this great sort of Pulse, I will now speak of the small sort, as Pease, and their like ; and of Pease there are two kinds, the Garden-Pease, and the field-Pease, and for this use (albeit both are very good) yet the Garden-pease are best, for they are soonest boyled

boyled and are most tender, and serve for most use, as for pottage, boyling, parching, speling; and of these Garden pease, there are divers kinds, as white pease, French pease, Hastings, Rounsilals, and such like, the first being the longest lasters, the second the pleasantest in taste, the third the earliest and tenderest, and the last largest and fullest.

The field pease are only of two kinds, as the white pease and the gray pease; and they seldome make pottage, because they are unapt to break, but are only for boyling and making of leap pease, or for parching, yet a good and a strong food: and as we use pease, so in other countries they use Lupins, Lentils, Tares, Fetches, and such like smaller pulse, but they are neither so good, wholesome, nor savoury in taste, being a kind of grain more rank, sulsome, and breeding of ill blood and infection within: these in cases of Sea-fare and war-fare, ought principally to be eschewed and shunned.

Several sorts
of Garden-
pease.

Now it resteth after this long digression of these severall grains, and their uses, with the meats and profits which are made of them, that we come to the safe manner of keeping and preserving them either by Land or Water, for Victual, or Transportation, so as they may last and indure without ill smell or rottenness.

And first for transportation of grain by Sea, it is two wayes to be done, as either in great quantities for trade and the victualling of other nations, or in smaller quantity for victualling the men in the Ship, prepared for a long and tedious voyage.

Grain for
trade.

For the transporting of Grain for trade in great quantities, it is to be intended the voyage is seldome long, but from neighbour to neighbour, and therefore commonly they make close decks in the ships to receive the grain, fair and even boarded, yet if such decks be matted and lined, both under, and on each side, it is much the better; and this matting would be strong and thin. There be some which make the decks only of mats, and sure it is sweet, but not so strong as the boards: therefore the best way of transportation, is, to have strong boarded decks well matted; and then spreading the Corn of a reasonable thickness, to cover it with matting again, and then to lay corn on it again, and then mats again, that between every reasonable thickness of

To transport
Grain for
Trade.

Grain a mat may lye ; the profit whereof is , that when the Corn with his own heat, and the working of the Sea shall begin to sweat, which sweat, for want of air to dry it up, would turn to putrefaction.

Then these mats thus lying between, will not onely exhale and suck up the sweat , but also keep the Corn so cool and dry, that no imperfection shall come unto it. And here is to be noted, That these mats should rather be made of dry white bents, then of flags and bulrush ; for the bent is a firm, dry, crisp thing, and will not relent or sweat of it self, but the flag or bulrush is a spongy and soft substance, which is never empty of its own and other moistures.

Transporting
of Victuals.

Now for transporting of Grains, for Victuals for the Ship, which is in much smaller quantity, because it is but for the private use of a few within the ship ; the onely best and safest way, is, to take Salt-fish barrels, or any Cask in which any Salt first hath been piled, as Cod, Herrings, Salmon, Sprats , or any other powdred Fish ; and whilst the vessels are sweet , you shall chalk them both within and without with plaister , daubing them all over , then into them put your Grain of what kind soever it be , and head them up close , and then stow them in such convenient dry place of the ship, as you shall think fit, and questionless if belief may be given to the worthiest Authors which have writ in this kind, you may thus keep your Grain sweet, sound, and in full perfection from one year to an hundred and twenty years ; but certainly daily experience shews us, that all kind of Grain thus put up and kept , will remain sound and sweet, three, four, and as some say, seven years, for so far hath lately been try'd : and what here I speak of ship-board, the like may be done in any Town of War or Garrison, whether besieged, or not besieged, or in any other place , where any necessity shall compel ; the proof of this manner of pilling or putting up of Grain, serveth as well for Land as Sea.

CHAP.

CHAP. XX.

The Enriching of all manner of barren Grounds, and to make it fruitfull to bear Hopps.

THe Hop of all plants is the most tender, and can endure neither too rich a ground, nor yet too poor: for being planted in the first, it bringeth forth only leaves and no bells, and in the latter yieldeth neither leaves nor bells.

Now in the first sort of Ground, which is fertile and rich, I Abating fertility. have nothing to do but only to advise how you may allay and lessen that too much fatness, by mixing your hills well with Chalk, or small sharp Gravel, if it be a hassel or mix'd mould; and with good store of red sand if it be a stiff clay, for either of these mixtures will in short space abate any fertility.

But if the soyl be contrary to this, that is, extream barren, Increasing of fertility. then you shall seek by these means following to increase the fertility. First, when you have taken a view of that barren earth, which you intend to convert to a Hop-garden; you shall first look to the situation thereof, whether it lye high or low, whether it be subject to inundations or drownings, or that it lye Choice of Earth. safe and free from any such annoyance: If it be subject to great and deep over-flows, then it is no ground for this purpose; but if it be onely lyable but to some small washings, then you may by a few small drains and sewerscaft through your alleys, convey away the water to some lower grounds, so as it may not continue long in the Gardens to do hurt. Draining water. Besides, for a further safety to the Hop, you shall make your hills a great deal bigger and higher, that when any over-flow shall happen, the water may not reach above the mid-part of the hill at the most, for the root may endure moistning, but not drowning; and this water thus running through the alleys, and not drowning the root, will bring to the ground very much fertility. But howsoever, after you have eas'd your ground of these particular faults, yet the general fault, which is barrenness, will remain still: therefore, having plotted out your Garden, and fenced it sufficiently about, you shall then cast up your hills about *Michaelmas*, placing them

Casting of
hills and
allies.

them in a very orderly manner, and making alleyes between them of four or five foot breadth between hill and hill, so as a man may walk at pleasure through and about them: neither shall these hills stand all directly behind one another, for so one will overshade another, which is an annoyance, but according to this Figure, where there is a largeness of space, and a by-passage, through which the Sun may come to give comfort to every Plant.

These hills, if the ground be free from water, may be raised about two foot, or a foot and a half high, and of a compass answerable to the height; neither so little, that the hill may be sharp like a Sugar-loaf, nor yet so big, that the hill may lye flat, and so retain and hold any rain or wet, which shall fall upon it; but you shall keep a due middle proportion, making the hill convenient for your Plants and poles, and so as it may shoot or put off any wet, or other annoyance, which shall fall upon it.

the composition
of the
enriching of
hills.

Now these hills you shall not make intirely, all of one mould, but you shall take, as it were, a third part or better thereof, then another part of the earth which lyeth under dung-hills, and the last part of Sope-ashes; and these three bodyes you shall mix equally together, and of them compound your Hop-hills: but if this seem somewhat difficult, and that you cannot find enough for your purpose of either of these manures, then you may take three parts of the natural earth, and but onely a fourth part of the other two, and therefore mix your Hop-hills, and it will be sufficient to afford you profit enough, provided you be able once in three or four years to renew it, for so long this will last in full strength and power.

Preparing of
the allies.

When you have thus made up your hills, you shall then pare up with a paring shovel all the green swarth quite through all your allies at least four fingers thick, and with the swarth so pared up, you shall cover all your hills almost to the top, turning the green swarth next unto the earth, so as it may rot, for that is an excellent manure also: then when your allies are all thus

thus cleansed of their swarth, you shall take good store of braken, or fern, and strow it all over quite thorow all the allies, so that it may lye in a good thickness, almost to the midst of the hills, which having all the Winter to rot in, will not only be an exceeding comfort to the hills, and preserve both them and their plants from many evils, but also being shovelled up together with the earth in the spring time, will be a marvellous strong manure wherewith to replenish the hills, and to make them to prosper exceedingly, and to save much other cost and charges as well in manure as in carriage.

When your hills are thus enriched, and your allies thus prepared, you shall then open your hills in the top, and set your plants, that is to say, in every hill four plants at the least, being well prepared; and this should be done in the month of *October*, and these plants must be set good and deep in the earth, and covered all over at the least four fingers thick: and if with the earth which covereth these plants you mix Ox-blood and Lime, it will not only give great comfort and nourishment to the Plants, but also defend and save the roots from worms and other vermines, which otherwise would seek to destroy them.

After your Garden is thus planted over, you shall then let it rest till the following Spring, and about *April*, finding the small Twines of your Hopps issued *out of the Hills* and running alongst the ground, you shall then set up your Poles, which Poles, so they be long and streight, may be of any wood you please, as either Ash, Elme, Withy, Willow, or Sallow, and in the setting up of these poles, you shall have two very carefull respects: First, that in putting in of the poles, and fastening them with the earth, you do not hurt the Hop roots, which a small carelesness may do, but be sure to set them cleer at the roots; and that you may do it the better, and make your poles to stand the faster, it is good that you have an iron auger, there with first to pierce the ground, and then to put the pole after, and so ram it in hard that it may not stir. The second care is, that you place not one pole to overshadow another, but that they may stand so cleer one from another, that which way soever the Sun shall cast his beames, yet every plant (as it winds about the

The Planting
of Hopps.

Posing of
Hopps.

the pole) may be an equall partaker of the same.

This, with a small observation in the setting up of the poles may easily be performed : the number of poles that you shall set on every hill, must be answerable to the Syens which shall issue from the roots, allowing to every pole two Syens at the least, and not above three at the most : these Syens (when your hills are poled) you shall with your hands twine about their severall poles, and those which are but new peeping from the ground, you shall so fold among the other Branches, as they may of themselves run about the pole; and as these, so also all the other twigs, which are any way derived from the main Sien, leaving not any at all to run upon the ground; for that is altogether profitless, and to no use.

Of weeding
Hops.

For the weeding of this barren earth thus made into an Hop-Garden, there is little care to be had: for first, the soap ashes where-with the hills are manured, the Ox blood and the Lime, are such enemies to all manner of weeds, that they will not suffer any to grow where they abide: Next, the Braken and Fern, which covereth the alleyes, is such a poysoner and smotherer of any thing that shall grow underneath it, that it will not suffer any weed to peep or spring up through it; yet if in any especial place, where neither of these defences come, it happen that any weeds do grow, then you shall with your best care cut them away, or pull them up, and so your Garden shall remain comely, pleasant and fruitfull to every prospect.

C H A P. XXI.

*A generall computation of men, and Cattels labours :
what each may do without hurt daily.*

Plowing and
Sowing.

TO speak generally of all Husbandly works, where the Country is tolerable, without any extraordinary difficulty, you shall understand, that a man may well in stiff grounds, plow an Acre, or an Acre and a half, and in light sand grounds two or three Acres with one Team in a day, and he may plough and sowe in stiff ground two Acres and an half each day, and in light ground four at least with one Team; and alwayes what he soweth, that he may harrow the same day also.

A man may well mow of good and deep loggy meadow, or of rough, uneven meadow, every day one acre; mowing clean and making a smooth board of well standing and good smooth meadow, an acre and a half each day: and of very thin and short grass, or upland meadow, two acres at the least every day.

Also, he may mow of Corn, as Barley and Oats, if it be thick, loggy, and beaten down to the earth, making fair work, and not cutting off the heads of the ears, and leaving the straw still growing one acre and a half in a day: but if it be good, thick, and fair standing corn, then he may mow two acres, or two acres and half in a day; but if the corn be short, and thin, then he may mow three, and sometimes four Acres in a day, and not be overlaboured: Also of beans he may mow as much, and of pease mixt with beans, having a hook to follow him, no less; for they are works in this nature most easie, and least troublesome.

One man with a Binder may well reap an Acre of Wheat or Rye in a day, if it be principal good and well standing, but if laid or beaten down with weather, then three rood is fully sufficient for a dayes labour; but if it be thin and upright standing, then he may reap and bind five roods in a day: Of small pease, Fetches, and such like, a man may well reap two acres every day.

Now forasmuch as it is a custom in divers Countries (and truly it is exceeding profitable and worthy imitation) to sheaf and bind up both Barley and Oats, as well as Wheat or Rye, and that both saveth much Corn, and also makes it take a great deal less room, and that this labour is to be done after the mowers, as the other was after the reapers, by gathering the Barley, or Oats up without a sickle or hook, as it lyes in the swath, and so binding it in sheafs, you shall understand, that one man in a day shall bind as much as one mower can mow; and if the man be any thing skilful in the labour, two binders will bind as much as three mowers can mow.

For the gathering or inning of Grain, no man can proportion the number of loads, or quantity of ground, shall daily be brought home, sith the journeyes are uncertain, some going.

a mile, some half a mile, and some two mile : therefore it is the Husbandmans best way, the first day to go with his Team himself, and both to observe the labour and distance of place, and by that to compute what may be done after, without hurt to his cattel, and where he fails of any hope, there to make a strict account of the errour ; for it is either ignorance or carelessness which brings forth mischances, speaking of husbandry, as over-throwing the Team, over-loading the Team, breaking necessary instruments, or not respecting the wayes and passages ; any of which may in a day hinder more then half a dayes labour.

Ditching.

Again, a man may in a day ditch and quickset of a reasonable ditch four foot broad, and three foot deep, a rod or a pole a day ; allowing sixteen feet to the rod, and so of large measure less ground, and of less ground larger measure according to the sufficiency of the fence which you purpose to make.

Hedging.

A man may hedge also in a day, if the hedge be good and substantial, that is to say, five foot high, well bound, thick stackt, and close laid, two rod in a day ; and if the work be lower or thinner, then double so much more according to the former proportion.

ing.

For this plashing of hedges, or making a quick fence, if he do it workmanly, and that the growth be high and well grown, and then he lay it thick, close, and strongly bound in the top, turning the quick downward and inward, to plash a rod a day, is as much as any man can well do : but if he plash it after the west-country fashion, that is, onely cutting it down, and laying it along close to the ground, seeking only thickness, and not much guard or comeliness, then he may well plash a rod and a half a day without trouble : And sure in this work is great care and art to be used, as well for the preservation of the quick, as the goodness of the fence, being a thing of worth and validity to every Husbandman.

Again, a man may delve or dig, as for Garden mould, Hemp-yard, Flax-yard, or for the setting of corn, or for levelling of uneven places, one rod in a day, and the ground so digged and delved, he may rake, dress, and level in the same day also : but if he dig it deep, and trench it, and manure it, as is meet, either

ther for Garden, Orchard, or Corn-setting, then to delve half a rood in a day, is a very great proportion, because ordinarily to delve, as to receive ordinary Seeds, requires but one spade graft in depth; but extraordinarily to delve, as for enriching and bettering of the ground, and to cleanse it from stones, weeds, and other annoyances, will require two spades graft at the least.

Lastly, a man may thrash if the Corn be good and clean, without some extraordinary abuse or poverty in the grain, in one day four Bushels of Wheat or Rye, six bushels of Barley or Oats, and five bushels of Beans or Pease: but then the Pulse must be imagined to be exceeding good, otherwise a man shall thrash less of it, than of any other kind of Grain; for as when it is well laden, it yieldeth plentifully, so when it is poor and lightly laden, it yieldeth little or nothing, and yet hath not one stroke less of the flail, nor any labour saved, more than belongs to the best pulse whatsoever, being ever at least three times turned, and four times beaten over.

Thrashing.

Having thus generally run over (in a short computation) the labours of the Husbandman, I will now briefly as I can, go over the particular days labour of a Farmer or Plow-man, shewing the particular expence of every hour in the day, from his first rising, till his going to bed, as thus for example: we will suppose it to be after *Christmas*, and about plow-day (which is the first setting out of the Plow) and at what time men either begin to fallow, or to break up Pease-earth, which is to lie to bait, according to the custom of the Country; at this time the Plow-man shall rise before four of the Clock in the morning, & after thanks given to God for his rest, and prayer for the success of his labours, he shall go into his stable, or beast-house, and first he shall fodder his Cattle, then cleanse the house, and make the booths clean, rub down the Cattle, and cleanse their skins from all filth; then he shall curry his Horses, rub them with cloaths and wisps, and make both them and the stable as clean as may be; then he shall water both his Oxen and Horses, & housing them again, give them more fodder, & to his Horse by all means Provender; as Chaff, and dry Pease or Beans, or Oat-hulls, Pease or Peans, or clean Oats, or clean Garbadge (which is the hinder ends of any Grain but Rye) with the straw chopt small amongst it, according

The particular expence of a day.

ding as the ability of the Husbandman is.

And whilst they are eating their meat, he shall make ready his Collers, Hames, Treates, Halters, Mullens, and Plow-gearcs, seeing every thing fit, and in his due place, and to these labours I will also allow full two hours, that is, from four of the clock till six; then he shall come in to breakfast, and to that I allow him half an hour, and then another half hour to the gearing and yoking of his Cattle, so that at seven of the clock he may set forward to his labour, and then he shall plough from seven of the Clock in the morning, till betwixt two and three in the afternoon; then he shall unyoke and bring home his Cattle, and having rubb'd them, dress them and cleansed away all dirt and filth, he shall fodder them, and give them meat; then shall the servants go in to their dinner, which allowed half an hour, it will then be towards four of the clock, at which time he shall go to his Cattle again, and rubbing them down, and cleansing their stalls, give them more fodder: which done, he shall go into the Barn, and provide and make ready fodder of all kinds for the next day, whether it be hay, straw, or blend-fodder, according to the ability of the Husbandman.

This being done, and carried into the stable, Oxe-house, or other convenient place, he shall then go water his Cattle, and give them more meat, and to his Horse-Provender, as before is shewed: and by this time it will draw past six of the Clock, at which time he shall come in to supper, and after supper, he shall either by the fire side mend his shoes both for himself and their Family, or beat, or knock Hemp, or Flax, or pick and stamp Apples or Crabs, for Cyder, or Verjuyce, or else grind Malt on the Quernes, pick Candle-rushes, or do some Husbandly office within doors till it be full eight a Clock: Then shall he take his Lanthorn and Candle, and go see his Cattle, and having cleansed the stall and planks, litter them down; look that they be safely tied, and then fodder, and give them meat for all night; then giving God thanks for benefits received that day, let him and the whole household go to their rest till the next morning.

Now it is to be intended, that there may be in the Household

hold more servants than one : and so you will demand of me what the rest of the servants shall be imployed in, before and after the time of plowing. To this I answer, that they may either go into the Barn and thrash, fill or empty the Malt vat, load or unload the Kilne, or any other good and necessary work that is about the yard ; and after they come from plowing, some may go into the Barn and thrash, some hedge, ditch, stop gaps in broken Fences, dig in the Orchard or Garden, or any other Out-work, which is needful to be done, and which about the Husbandman is never wanting, especially one must have a care every night to look to the mending or sharpening of the Plough-irons, and the repairing of the Plough and Plough-gears, if any be out of order ; for to defer them till the morrow, were the loss of a days work, and an ill point of Husbandry.

Now for the particular labours of Cattle, though it be already inclusively spoken of in that which is gone before, where I shew you how much a man may conveniently plough in a day with one Team or Draught of Cattle, yet for further satisfaction, you shall understand, that in your Cattle there are many things to be observed, as the kind, the number, and the Soil they labour in. For the kind, which are Oxen, Bulls, or Horses ; the best for the draught are Oxen, and the reason I have shewed in my former Works : The next are Horses, and the worst, Bull's, because they are most troublesome : the number fit for the Plough, is eight, six or four ; for the Cart, five or four ; and for the Waine, never under six, except in leading home of Harvest, where loading easily, four very good Oxen are sufficient ; for the Soil, if it be in the toughest and deepest earth, eight Beasts can do no more but fallow or break up Pease earth ; no, nor fewer stir, if the season grow hard and dry ; for sowing, Winter rigging and Seed furrow, six Beasts may dispatch that labour : if the Soil be mix'd and haffel, then six may fallow and sowe Pease, and four do every other ordure : but if it be light and easie Sand, then four is enough in every season. For the quantity of their work, an Oxe-plough may not do so much as a Horse-plough, because they are not so swift, nor may be driven out of their pace, being

Particular labours of Cattle.

ing more apt to surfeit than Horses be, so that for an Ox-plough to do an Acre, and an Horse-plow an Acre and a Rood, or an Acre and a half in good ground, is work fully sufficient.

CHAP. XXII.

The applying of Husbandry to the several Counties of this Kingdom, wherein is shewed the Office and Duty of the Carter or Plow-man.

IT is to be understood, that Husbandry doth vary according to the Nature and Climates of Countries : not one rule observed in all places, but according as the Earth, the Air, the much or little heat, moisture or cold doth increase or diminish, so must the skilful Husbandman alter his seasons, labours and instruments ; for in stiff Clays, as are all the fruitful Vales of this Kingdom (of which I have named most part in a Chapter before) as also *Huntington-shire*, *Bedford-shire*, *Cambridge-shire*, and many other of like nature ; all manner of arable work must be begun betimes in the year, and the Ploughs and Instruments must be of large size, and strong timber, and the labour great and painful : so also in mixt soils, that are good and fruitful, as *Northampton-shire*, *Hartford-shire*, most part of *Kent*, *Essex*, *Bark-shire*, and Counties of like nature ; all arable toils would begin at latter seasons, and the Ploughs and Instruments would be of middle size, and indifferent timbers, and the labour somewhat less than the other ; but the light sandy grounds which have also a certain natural fruitfulness in them ; as in *Norfolk*, *Suffolk*, most part of *Lincoln-shire*, *Hampshire*, *Surry*, and Counties of that nature, all arable toils would begin at the latest seasons, and the Ploughs and Instruments would be of the smallest and lightest size, and of the least timber, and the labour of all the other is easiest.

Lastly, for the barren unfruitful earth (of which only I have written in this (as in *Devonshire*, *Cornwal*, many parts of *Wales*, *Darbyshire*, *Lancashire*, *Cheshire*, *York-shire*, and many other like, or worse than they : the arable toils would have a fit season of the year, according to the temperateness of the year, which if it happen early, then you must begin your labours at lat-

ter season, and for your Plough and Instruments, they must not keep any certain proportion, but be framed ever according to the ground, the stronger and stiffer ground having ever the strong and large Plough, with Instruments of like kind, and the lighter earth a Plow and Instruments of more easie substance: as for the labour, it must be such, and no other, than that which hath been already declared in this Book.

And hence it comes, that the office and duty of every skilful Plow-man, or Carter, is, first to look to the nature of the earth, next to the seasons of the year, then to the customs and fashions of the place wherein he liveth; which customs, although they be held as second natures amongst us, and that the best reasons of the best work-men commonly are, that thus I do, because thus they do; yet would I wish no man to bind himself more strictly to custom, than the discourse of reason shall be his warrant, and as I would not have him to prejudicate in his own opinion, so I would not have him too great a slave to other mens tradition, but standing upon the ground of reason, made good by experience, I would ever have him profit in his own judgment.

Now the further office and duty of the Husbandman, is, with great care and diligence, to respect in what sort fashion to plough his ground: for although I have in the former Chapter shewed how he should lay his furrows, what depth he shall plow them, and how he shall be able to raise and gain the greatest store of mould; yet is there also another consideration to be had, no less profitable to the Husbandman than any of the former; and that is, how to lay your Land best for your own profit and ease, as also the ease of your Cattle which shall draw within your draught, as thus for instance: If your arable Land shall lie against the side of any steep hill (as for the most part all barren earths do) if then you shall plow such Land directly against the hill, beginning below, and so ascending straight upright, and so down again, and up again, this very labour and toying against the hill will breed such a bitter wearisomness to the cattle, and such a discouragement, that you shall not be able to compass one half part of your labour, besides the danger of over-heating and surfeiting of your beasts, whence will spring many

The Carter's office.

many mortal diseases : Therefore when you shall plough any such ground, be sure to plough it side-ways over-thwart the hill, where your Beasts may tread on the level ground, and never directly up and down, so shall the Compost and Manure which you lay upon the ground not be so soon wash'd away from the upper-part of the ground, because the furrows not lying streight down in an even descent, but turned cross-ways upward against the hill, it must necessarily hold the Soil within it, and not let it wash away.

Of Cattle for draught.

Again, it is the office of every good Plow-man to know what Cattle are meetest for his draught, as whether Oxen or Horse, or both Oxen and Horse : wherein is to be understood, that although of all draughts whatsoever within this Kingdom, there is none so good to plough withal, both in respect of the strength, stability, indurance, and fitness for labour, as the Oxen are, in whom there is seldom or never any loss ; because whensoever his service faileth in the draught, his flesh will be of good price in the shambles ; yet notwithstanding in this case a man must necessarily bind himself much to the custom of the Country, and fashion of his neighbours ; for if you shall live in a place where fuel is scarce and far to be fetch'd, as commonly it is in all barren Countries, which for the most part are stony Champains, or cold Mountains ; and your Neighbours, as well for the speed of their Journeys, as for length, keep Horse-draughts ; in this case also you must do the like, or else you shall want their company in your Journey, which is both discomfort and disprofit, if any mischance or casualty shall happen ; or being inforc'd to drive your Oxen as fast as they do their Horse, you shall not only over-heat, tire, bruise, and spoil them, but also make them utterly unfit either for feeding or labour ; and therefore if your Estate be mean, and that you have no more but what necessity requires, then you shall sort your Plow or Team according to the fashion of your Country, and the use of your neighbours : but if God have blest you with plenty, then it shall not be amiss for you to have ever an Oxe-draught or two to till your Land ; and a Horse-draught to do all your forraign abroad businesses : so shall your work at home ever go constantly forward, and your outward necessary Provisions be never wanting. Now
for

for the mixture of Oxen and Horses together, it falleth out oftentimes that the Plow-man of force must be provided with Cattle of both kind, as if he happen to live in a rocky Country, where the steepness of the Hills, and narrowness of the ways, will neither suffer Cart, Wain, nor Tumbrel to pass; in this case you shall keep Oxen for the Plow to till the ground with, and Horses to carry pots and hooks: the first to carry forth your manure, and the other to bring home your Hay and Corn-harvest, your fuel and other provisions, which are needful for your family, as they do both in *Cornwal*, and other mountainous Countries, where Carts and Wains, and such like draught, have no possible passage.

Again, it is the office and duty of every good Plow-man to know his several labours, for every several month through the whole year, whereby no day nor hour may be mispent, but every time and season employed according as his nature requireth: as thus for example.

In the Month of *January*, the painful Plow-man, if he live in *January*. fertile and good Soyls, as among rich, simple Clays, he shall first plow up his Pease earth, because it must lie to take bait before it be sown; but if he live in fruitful, well mixt Soyls, then in this month he shall begin to fallow the field he will lay to rest the year following: but if he live upon hard barren earths (of which chiefly I write) then in this month he shall water his meadows & pasture grounds, and he shall drain and make dry his arable grounds, especially where he intends to sowe Pease, Oats, or Barley the Seed-time following. Also he shall stub up all such rough grounds, as he intends to sowe the year following. You shall measure and trim up your Garden moulds, and you shall comfort with manure, sand, or lime, or all three mixt together, the Roots of all barren Fruit-trees; and also cut down all such Timber, only there will be loss in the Bark, for the time is somewhat too early for it to rise. Lastly, you may transplant all manner of Fruit-trees, the weather being open, and the ground easie; you may rear Calves, remove Bees, and for your own health keep your body warm, let good diet and wholesome be your Physician, and rather with exercise than sawce encrease your appetite.

February.

In the month of *February*, either set or sowe all sorts of Beans, Pease, and other Pulse, and the stiffer your ground is, the sooner begin your work; prepare your Garden-mould, and make it easie and tender; prune and trim all sorts of Fruit-trees, from moss, cankers, and all superfluous branches; plash your hedges, and lay your quick-fets close and intire together; plant Roses, Gooseberries, and any fruit that grows upon little bushes; graft at the latter end of this month upon young and tender stocks, but by all means overlade not the stocks.

Lastly, for your health, take heed of cold, forbear meats that are slimy and phlegmatick, and if need require, either purge, bathe, or bleed, as Art shall direct you.

March.

In the month of *March*, make an end of sowing of all sorts of small Pulse, and begin to sowe Oats, Barley, and Rye, which is called *March-Rye*; graft all sorts of Fruit-trees, and with young Plants and Syens replenish your Nursery; cover the roots of all trees that are bared, and with fat earth lay them close and warm: if any Tree do grow barren, bore holes in the Root, and drive hard wedges or pins of Oak-wood therein, and that will bring fruitfulness; transplant all sorts of Summer-flowers, and give new comfort of manure and earth to all early Out-landish flowers, especially to the *Crown Imperial Tulips*, *Hyacinth*, and *Narcissus* of all shapes and colours; cut down under-wood for fuel and fencing, and look well to your Ewes, for then is the principal time of yeaning.

And lastly, bathe often, and bleed but upon extremity, purge not without good counsel, and let your diet be cool and temperate.

April.

In the month of *April*, finish up all your Barley-seed, and begin to sowe your Hemp and Flax: sowe your Garden-seeds, and plant all sorts of Herbs; finish grafting in the stock, but begin your principal inoculation, for then the Rind is most pliant and gentle; open your Hives, and give Bees free liberty, and leave to succour them with food, and let them labour for their living.

Now cut down all great Oak-timber, for now the bark will rise, and be in season for the Tanners; now scour your ditches, and gather such manure as you make in the streets and high-ways, into great heaps together; lay your meadows, sleight your corn-

corn-ground, gather away stones, repair your high-ways, Set Oziers and Willows, and cast up the banks and mines of all decayed fences.

Lastly, for your health, either purge, bathe, or bleed, as you shall have occasion, and use all wholesome recreation : for than moderate exercise in this month, there is no better Physick.

In the month of *May*, sow Barley upon all light sands and May. burning grounds, so likewise do your Hemp, or Flax, and also all sorts of tender garden seeds, as are Cucumbers, and Melons, and all kind of sweet smelling herbs and flowers ; Fallow your stiff clayes, summer stir your mixt earth, and soyl all light and loose hot sands ; prepare all barren earth for Wheat and Rye, burn bait, stub Gorse or Furs, and root out Broom and Fern ; begin to fold your sheep, lead forth manure, and bring home fuell and fencing ; weed your winter corn, follow your common works, and put all sorts of grasse either in pasture or teather ; put your Mares to the Horse, let nothing be wanting to furnish the Dairy ; and now put off all your Winter fed Cattel, for now they are scarcest and dearest ; put young steers and dry kine now to feed at fresh grasse, and away with all pease-fed sheep ; for the sweetness of grasse mutton will pull down their prices.

Lastly, for your health, use drink that will cool and purge the blood, and all other such physical precepts, as true Art shall prescribe you : but beware of Mountebanks, and old wivestales, the latter hath no ground, and the other no truth, but apparent coufenage.

In the month of *June*, carry sand, marle, lime, and manure of June. what kind soever to your land ; bring home your coals and other necessary fuel fetch far off ; shear early fat sheep, sow all sorts of tender herbs, cut rank low meadows, make the first return of your fat cattel, gather early summer fruits, distill all sorts of plants and herbs whatsoever.

And lastly, for your health, use much exercise, thin dyet, and chaste thoughts.

In the month of *July*, apply your hay harvest ; for a day July. slackt is many pounds lost ; chiefly, when the weather is uncon-

stant, shear all manner of field-sheep, Summer-stir rich stiff grounds, soyl all mixt earths, and latter soyl all loose hot sands. Let herbs you would preserve, now run to seed; cut off the stalks of out-landish-flowers, and cover the roots with new earth, so well mixt with manure as may be; sell all such Lambs as you feed for the butcher, and still lead forth sand, marl, lime, and other manure; fence up your copses, graze your elder under-woods; and bring home all your field-timber.

And lastly, for your health, abstain from all physick, bleed not but upon violent occasion, and neither meddle with Wine, Women, nor no other wantonness.

August.

In the Month of *August*, apply your Corn Harvelt, shear down your Wheat and Rye, mow your Barley and Oats, and make the second return of your fat sheep and cattle; gather all your Summer greater fruit, Plums, Apples, and Pears; in Summer make your sweet Perry, and Cyder; Set slips, and syens of all sorts of Gilly-flowers, and other flowers, and transplant them that were set the Spring before, and at the end of this month begin to winter-rig all fruitful soyls whatsoever, Geld your lambs, carry manure from your dove-coats, and put your swine to the early or first mast. And lastly, for your health, shun feasts and banquets. Let Physick alone, hate wine, and onely take delight in drinks that are cool and temperate.

Semprember.

In the month of *September*, reap your pease, beans, and all other pulse, making a final end of your harvest; now bestow upon your wheat Land your principal manure, and now sow your Wheat and Rye, both in rich and in barren climates; now put your swine to mast, of all hands, gather your winter fruit, and make sale of your wooll, and other summer commodities; now put off those stocks of bees, you mean to sell, or take for your own use, close thatch and daub warm all the surviving hives, and look that no Drone, Mice, or other Vermine be in or about them; now thatch your stacks and reeks, thrash your seed Rye and Wheat, and make an end with your cart of all forraign journeys.

Lastly, for your health, in this month, use Physick, but moderately; forbear fruits that are too pleasant or rotten, and, as death, shun ryot and surfeit.

In

In the month of *October*, finish your wheat-feed, and scour *October*.
ditches and ponds, plash and lay hedges and quickset, transplant,
remove or Set all manner of fruit-trees, of what nature or quality
soever; make your Winter Cider and Perry, spare your private
pastures, and eat up your corn-fields and Commons; and now
make an end of winter ridging, draw furrows to drain, and keep
dry your new sown corn; follow hard the making of your malt,
rear all such calves as shall fall, and wean those foals from your
draught mares, which the Spring before were foaled: now sell all
such sheep as you will not winter, give over folding, and separate
Lambs from the Ewes, which you purpose to keep for your own
stock.

Lastly, for your health, refuse not any needfull Physick at the
hands of the learned Physitian, use all moderate sports, for any
thing now is good, which reviveth the spirits.

In the month of *November*, you may sow either Wheat or Rye *November*.
in exceeding hot soyls, you may then remove all sorts of fruit-
trees, and plant great trees either for shelter or shadow: now cut
down all sorts of Timber, for plows, carts, axeltrees, naves, har-
rows, and other husbandly offices; make now the last return of
your grasse fed cattle, bring your swine from the mast, and feed
them for slaughter, rear what calves soever fall, and break up all
such Hemp and Flax, as you intend to spin in the winter sea-
son.

Lastly, for your health, eat good wholesome and strong meats,
very well spiced and drest, free from rawness; drink sweet wines,
and for digestion ever before cheese, prefer good and moderate
exercise.

In the Month of *December*, put your sheep and swine to the *December*.
pease Reeks, and fat them for the slaughter and market; now
kill your small porks, and large bacons, lop hedges and trees,
saw out your timber for building, and lay it to season; and if
your land be exceeding stiff, and rise up in an extraordinary fur-
row, then in this month begin to plow up that ground whereon
you mean to sow clean beans only; now cover your dainty fruit
trees over with canvanse, and hide all your best flowers from frost
and stormes, with rotten old horse-litter; now drain all your
corn-fields, and as occasion shall serve, so water and keep moist

your meadows; now become the fowler, with Piece, Nets, and all manner of Engines, for in this month no fowl is out of season; now fish for the Carp, the Bream, Pike, Tench, Barbel, Peal and Salmon.

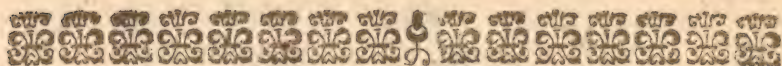
And lastly, for your health, eat meats that are hot and nourishing, drink good wine that is neat, sprightly and lusty, keep thy body well clad, and thy house warm, forsake whatsoever is flegmatick, and banish all care from thy heart, for nothing is more unwholesome then a troubled spirit.

Many other observations belong unto the office of our skilful Plow-man or Farmer; but since, they may be imagined too curious, too needless, or too tedious, I will stay my pen with these already rehearsed, and think to have written sufficiently, touching the application of grounds, and office of the Plow-man.

The End of Markham's Farewell to Husbandry.

The

The Table.



The Table and general Contents of the whole Book.

CHAP. I.		
T HE Nature of Grounds in		<i>Sowing of Salt.</i> p. 13.
general	pag. 1	<i>The excellency of salt.</i> ib.
The knowledge of barren grounds.	p. 2.	<i>Of steeping seed in brine.</i> p. 13.
CHAP. II.		CHAP. III.
The Ordering, Tilling, and Dres-		<i>Of the ordering, tilling, and dres-</i>
sing of all barren clayes, simple		<i>sing of all rough barren clay,</i>
or compound.	p. 3.	<i>simple or compound, being over-</i>
The first enriching of barren		<i>run with Gorse, Broom, or, &c.</i>
grounds.	p. 3.	<i>The destroying of weeds.</i> p. 14.
The manner of plowing.	p. 4.	<i>Burning of Bait.</i> ib.
The hacking, sanding, and liming		<i>The breaking of the burnt earth.</i>
of grounds	p. 4, 5.	ibid.
Additions. The use and profit of		<i>The causes of unfruitfulness.</i> 17.
lime.	p. 5.	<i>An excellent manure.</i> ib.
The manuring of grounds.	p. 6.	<i>The plowing.</i> ib.
The times for all labours.	p. 6.	<i>Of divers manures.</i> 18.
The second plowing.	p. 7.	<i>Of weeding.</i> ib.
The second hacking.	p. 7.	<i>The time of Weeding.</i> ib.
The first harrowing.	p. 7.	<i>The gathering of stones-</i> p. 9.
Of sowing the seed:	p. 8.	CHAP. IV.
The second harrowing.	ib.	<i>Of the ordering, tilling, and dres-</i>
Faults in the earth.	ib.	<i>sing of barren clayes, that are o-</i>
The clotting of grounds.	p. 9.	<i>ver-run with Whins.</i> p. 20.
Another manner of clotting.	p. 10.	<i>What whins are</i> ib.
Weeding.	p. 11.	<i>Paring of grounds.</i> p. 21
An objection and answer.	p. 12.	<i>Making of Baits.</i> ib.
The ordering of earths where sand		<i>Breaking of Baits.</i> p. 22.
wanted.	ib.	<i>Plowing.</i> ib.
		Har.

The Table.

Harrowing, weeding, & the profits	p. 24	Of Manures.	p. 39.
		Of harrowing, and other labours.	ib.
CHAP. V.		Of weeding.	p. 40.
Of ordering, tilling, and dressing all barren clays which are over-run with Ling and Heath.	p. 24.	CHAP. IX.	
Destroying of Heath.	p. 25.	The plowing, tilling, and ordering of sands, laden with moorish stinking grass.	p. 41.
Another burning of bait.	p. 26.	Grounds for fish-ponds.	p. 42.
Of weeding.	p. 27.	The draining of wet grounds.	p. 43.
CHAP. VI.			p. 44.
Of the ordering, trimming, and dressing of all barren Sands, bearing nothing but mossie grass	p. 28.	The harrowing.	p. 45.
Of Plowing.	p. 30.	The weeding.	p. 45.
Of Marling.	p. 31.	Additions.	CHAP. X.
What Marl is,	ib.	A general way for the enriching of any arable grounds, either Clay or Sand, with less charge than formerly.	p. 45.
Additions.	ib.	Steeping of Seed-corn, or any Pulse	p. 46.
Of Chalk and the use.	p. 33.	Shavings of horn	ib.
The profit.	p. 35.	Hoofs of Cattel.	ib.
CHAP. VII.		Of Wood,	p. 47.
Of the plowing, tilling, and dressing of all barren Sands, that are over-run with Braken, Fern, or Heath.	p. 35.	The enriching of ordinary Manure.	ib.
Of sanding and liming.	p. 36.	Additions.	CHAP. XI.
Of plowing and sowing.	p. 37.	How to enrich for corn any barren rough woody ground, being newly stubbed up.	p. 42.
Labours after sowing.	ib.	Additions.	CHAP. XII.
Of weeding.	p. 38.	The manner of reducing, and bringing unto their first perfection, all sorts of Grounds which have been over-flowed or spoiled by salt-water, or Sea-breach, either arable, or pasture, as also the enriching or bet-	
CHAP. VIII.			
The plowing, tilling, and ordering of all barren Sands, laden with twitch, and wild Bryar.	p. 38.		
The destroying of twitch and bryar.	ib.		

The Table.

<i>bettering of the same.</i> p. 50. Additions. CHAP. XIII. <i>Another way to enrich barren pasture, or meadow, without the help of water.</i> p. 57. CHAP. XIV. <i>How to enrich or make the most barren soyl to bear excellent good pasture or meadow.</i> p. 62. <i>Of watering grounds.</i> p. 64. <i>The helps in watering.</i> ib. <i>When and how to water.</i> ib. <i>The best season for watering</i> p. 65 CHAP. XV. <i>The enriching barren grounds, for Hemp or Flax.</i> p. 66. <i>Black clay for Hemp.</i> p. 67. <i>The making ill earth bear Hemp.</i> p. 68. <i>The weeding.</i> p. 69. CHAP. XVI. <i>The manner of stacking all kind of Grain with least loss,</i> 70. CHAP. XVII. <i>The diseases and imperfections which happen to all manner of Grain.</i> p. 72. <i>Crows, Pidgeons, or Birds, and the Cure.</i> p. 73. Additions. p. 74. <i>Of Pismires and Dorees, with the Cure.</i> p. 75, 76. <i>Of field Rats and Mice, and the Cure.</i> p. 77. <i>Of worms and the cure.</i> p. 78. <i>Of Rye not to be wet.</i> ib. <i>Of Snails</i> p. 79.	<i>Of Grasshoppers.</i> ib. <i>Of Moles, and the cure</i> p. 80. <i>Offences from the influence of Heaven.</i> p. 81. <i>Of smuttiness or mildew, and the Cure.</i> ib. Additions. ib. <i>Of Hail and the cure.</i> ib. <i>Of Lightning, Frosts, Mists, Fogs and blaskings, and the cure</i> 82, 83. <i>Corn reapt wet, and the cure.</i> 83. <i>Of washt corn.</i> p. 83. <i>To know washt corn.</i> p. 84. CHAP. XVIII. <i>How to keep all manner of Grain thrasht or unthrasht the longest time, and how to preserve it, &c.</i> p. 86. <i>Of Garners.</i> p. 87. <i>Of Hutches and their uses</i> p. 88. <i>To preserve Wheat.</i> p. 89. <i>To preserve Rye.</i> p. 93. <i>To preserve Beans.</i> ib. <i>To preserve Pease or Fetches.</i> 95. <i>To preserve Lentils or Lupins,</i> 98. <i>To preserve Oats.</i> ib. <i>To preserve Oat-meal.</i> p. 99. <i>To preserve any meal.</i> p. 100. <i>The preserving of all small seeds.</i> p. 101. CHAP. XIX. <i>How to keep Grain either for transportation, or, &c.</i> p. 101. <i>The use of Grain.</i> p. 102. <i>Of Pulse.</i> ib. <i>Of Rice and the use</i> ib. <i>Of</i>
---	---

The Table.

Of Wheat, and the use.	p. 103.	CHAP. XXI.
Of Oat-meal, and the use.	p. 104.	A general computation of men &
Of Barley, and the use.	p. 105.	cattels labours, &c. p. 122.
Of Buck, and the use.	ib.	Of Plowing, Sowing, and Mow-
Of Pulse, and the use.	p. 106.	ing ib.
Of French-beans.	ib.	Of Reaping and gathering Grain.
Of the Kidney-bean.	ib.	p. 113.
Of common field beans.	ib.	Of Ditching, Hedging, Plashing
Of Pease, and their use.	ib.	p. 114.
Several sorts of pease,	p. 107.	Of Delving and thrashing. 114.
To transport Grain.	ib.	The particular expences of a Day.
Additions.	CHAP. XX.	ib.
The enriching of barren Grounds,		The particular labour of Cattel,
and to make it fruitfull to bear		p. 117.
Hopps.	p. 109.	CHAP. XXII.
Abating and encreasing of fer-	ib.	The applying of Husbandry to the
tility.	ib.	several Countries. p. 118.
Choice of grounds.	ib.	The Carters office. p. 119.
Casting the bills.	p. 110.	Of Cattel for the Draught. 121.
Preparing the Allies, and Plan-	ib.	The several labours of the several
ting the Hopps.	ib.	Months. p. 121. to 126.

A D D I T I O N.

*An Excellent way to take Moles, and to preserve good
Ground from such Annoyance.*

Put Garlick, Onions, or Leeks, into the mouths of the holes,
and they will come out quickly, as amazed.

F I N I S.

IV.
THE
INRICHMENT
Of the
Weald of Kent.

O R,
A Direction to the *HUSBANDMAN*,
For the true Ordering, Manuring, and Inriching of all
the Grounds within the *Wealds* of *Kent*, and *Sussex*; and
may generally serve for all the Grounds in *England* of that
Nature: As

- 1 *Showing the nature of Wealdish Ground, comparing it with the Soyl
of the Shires at large.*
- 2 *Declaring what Marle is, and the severall sorts thereof, and where
it is usually found.*
- 3 *The profitable use of Marle, and other rich manuring, as well in
each sort of Arable Land, as also for the encrease of Corn and Pasture
through the Kingdom.*

Painfully gathered for the good of this
Island, by a Man of great Eminence and Worth; But
Revised, Enlarged, and Corrected with the consent, and
by conference with the first Author.

By *G. Markham.*

L O N D O N,
Printed for George Sawbridge, at the Sign of the Bible on
Ludgate Hill, 1675.



TO THE

Honourable Knight,
Sir *GEORGE RIVERS* of *Chafford*,
in the County of *Kent*.

S I R,

H Ad I no Scale (more than this bare and plain moulded Epistle,) by which to come to your worthy Ears, yet in respect of the honest Livery which it carries, (being necessary and busily Collections, especially gathered for the Country and Soyl wherein you live) I know it cannot chuse but find both favour and mercy in your acceptations; but when I call into my consideration the great worthiness of your expence in this and all other the like affairs, which tend to the general benefit of the Common-wealth, and weigh the Excellency of your Wisdom, Judgement, Bounty, and Affection unto Hospitality (which giveth both strength and advancement to Projects of this nature) I could not but take unto my self a double encouragement, and boldly say unto this Work which I offer unto your goodness, Go and approach with all thy sweetness before him, he that so perfectly knows all which thou canst or would'st discover; he that is able both to correct and amend any thing that is imperfect in thee, He, for Vertues sake, will never forsake thee. Believe me (Worthy Sir) should this Subject wish it self a Patron, I do not think it could wish beyond you; for you are a Volume full of

The Epistle Dedicatory.

at: but of which it Treateth: Witness your Tears, your Supportation
of: be Poor, and your continual Employment; with any of which
there is not (of your rank) a second living in your Country, to walk
hand in hand with you: Being then [dear Sir] the oldest and best
Friend to your Country forfake neither it, nor this that comes to serve
it; and though in this Glass, some lineaments may appear imperfect,
yet by the help of your Favour, (though little be expect, or most excel-
lent) nothing shall be gross or unworthy the survey of your worthier
Patience. And so I rest,

Yours to be commanded,

Gervase Markham.



A Discourse of the Weald of KENT;

And a Comparison of Arable Lands therein, with the other parts of the Shire. Together with some necessary Counsels for the Ordering and Enriching of the Marleable Lands in the Weald, as generally in any part of this Kingdom:

TH^e Weald of Kent is the lower part of that Shire, lying on the South side thereof, and adjoyneth to the Weald of *Sussex*, to the West. Further Additions.

The Weald both in *Kent* and *Sussex*, was sometimes all (or the most part) Woody, Wild, and (in the first times) uninhabited, and from thence took the name of Weal from the Saxon word *Weale*, or *Teale*, or *Weald*, which signifieth a Woody Country, or Forrest like ground. The *Britains* called it *Andred*, which signifieth Greatness or Wonderful, and in Latine it was called *Saltus Andred*, (that is to say) the Chase or Forrest of *Andred*, by reason of the great Circuit or large Bounds thereof.

Touching the true boundary or limits of this Weald, there have been divers Opinions, and most of them various, and much differing both in place and quantity, but that which is the nearest and best allied unto truth both according to the Opinions of *Affricus Menevensis*, *Henry of Huntingdon*, and others of most credible report, is, that it extendeth from the City of *Winchelsey* in *Sussex* an hundred and twenty miles in length towards the West, and thirty miles in breadth towards the North. Now although this report be most agreeing unto verity, yet who knows not that Curiosity may raise up many Objections to withstand it, and therefore Mr. *Lambert* in his Perambulation of *Kent*, hath prescribed the best and most infallible way to find out the true and

certain

certain bounds of this Weald, to be only by Jury, or the Verdict of twelve men impannelled for that purpose, either in case of controverſie, or other particular ſearch; and this hath been in theſe later times brought forth moſt plentifully: for it hath been found by divers late Verdicts, upon ſpecial and moſt neceſſary occaſions, than the Weald of *Kent* is truly, Mr. *Lamberts* ſecond ſtep in his Perambulation of *Kent*, reaching from *Wincheſſey* in *Suſſex*, and that Hill there, unto the top of *Rivers Hill* in *Kent*; and neither farther towards *London*, nor ſhorter towards *Tunbridge*; which agreeth ſo perfectly with the former limitations, that both may be received as moſt true and ſufficient.

This Weald was for many years held to be a Wild Deſart, or moſt unfruitful Wilderneſs (as write the Authors before mentioned) and indeed ſuch is the nature and diſpoſition of the Soyl thereof to this very day: for it will grow to trieth or wood, if it be not continually manured and laboured with the plough, and kept under by tillage; ſo as it may truly be ſaid of it, *Inculcæ reparantur vemere Sylvæ*. It is throughout (except in very few places adjoining to Brooks or Rivers) of a very barren nature, and unapt either for paſtorage or tillage, until that it be holpen by ſome manner of comfort, as dung, marle, freſh earth, fodder aſhes, or ſuch other reſreſhings; and that ſeemeth to have been the cauſe for which in old time it was uſed as a Wilderneſs, and kept for the moſt part with Herds of Deer, and droves of Hogs, as is ſpecified in divers hiſtorical relations.

And as there be yet remaining in *Suſſex* divers great Forreſts and ſundry Commons or Waſts, having 5 or 6 miles in length, which for the moſt part are not fit to be manured for Corn, and yieldeth but little profit in Paſture; ſo have there been alſo in *Kent* (within our memory) a great number of Woody and overgrown ground, converted of late, even after ſuch a manner as in the ſaid Perambulation is teſtified; where it is ſaid, That although the Weald of *Kent* belonged to ſundry known Owners long ſince, yet was it not then allotted into particular Tenancies, as the other parts of the Shire were; but it was in proceſs of time, by little and little gained, as men were contented to inhabit there, and to rid it of the wood. And hereof it is alſo, that besides ſundry whole Pariſhes which be named Dens or low places,

places, as *Tenterden*, *Malden*, *Beneden*, and sundry others, there be moreover many smaller portions almost in every part of the Weald of Kent, which be likewise called *Dens*; as the Den of *Carnbrook* in *Cranebrook*, the Den of *Hawkhurst* in *Hawkhurst*, and such others; the which (as it seemeth) were at the first undertaken to be manured by sundry particular persons, whose names were then taken for those very *Dens*, and continued many years together, as by ancient evidences it doth yet appear, howsoever the age of long time hath now almost worn and consumed them all out of knowledg. Neither doth the Weald of Kent contain so many great Manors or Courts (for the proportion of the largeness) as the rest of the Shire doth, but was appertaining, for a great part thereof, to sundry of those Manors which do lie at large dispersed thorow the Shire, whereof each one had a great portion in the Weald, which both in the Book of *Dooms-Day*, and in sundry the Court-Rolls, and Rentals, passeth by the name of Weald, and *Silva Porcorum*, or Swine gats, which were granted to divers of the Farmers and owners of sundry Tenancies which did belong unto those *Dens* and other Lands within the Weald.

And albeit these *Dens* be for the most part good large portions of Lands, that be now broken into many several possessions, so as the same one Den sufficeth twenty Householdiers at this day, yet it is very likely that each man at the first had his several Den wholly and unbroken, whereof he and his posterity beareth name, until that the same was by the Custome of *Gavel-kind*, by sale or by exchange divided and distributed amongst others into parts, as we do now see them. But howsoever this Weald be of it self unfruitful (as I said) and of a barren Nature, yet so it hath pleased the Providence of the Almighty to temper the same, that by the benefit of Margle or Marle (as it is commonly called) it may be made not only equal in fertility with the other Grounds of the Shire, as well for Corn as Grasse, but also superior to the more and greater part of the same. The which manner of bettering the ground is not now newly discovered, but was the ancient practise of our forefathers many years ago, as by the innumerable Marle-Pits digged and spent so many years past, the

The use of
Marle is an
ancient

Trees

Marling was discontinued, and is now revived.

Trees of 200, or 300 years old, do now grow upon them, it may most evidently appear; Besides the which, we have mention of Marle in Books of Gainage or Husbandry, that were written in the daies of K. *Edward* the 2d. or before, howbeit the same manner of tillage, by means of the Civil Warrs, maintained many years as well in the time of the Baron Warrs, as of the Warrs between the House of *York*, and the Family of *Lancaster*, was so given over, and gone out of use, until these thirty or forty years, that it may be said to have been then newly born and revived, rather than restored, because the very true art of inriching the ground by Marle, seemeth to lie hidden in part, as yet not to be discovered to the full: for in this short time we have seen many Arable grounds, which for sundry years after the marling of them have plentifully born Wheat and other grain, to be now become unfruitful, and so will they continue, albeit they should be now marled again. And this cometh to pass by the ignorance of the right manner of ordering the Marle, which is as strong and cheerful as ever it was before, howsoever it worketh not this natural effect, through the unskilfulness of the Husbandman, that both wasteth the Marle, and loseth withall his time, his labour, his cost, and the profit of his ground. I cannot deny but a man shall see some grounds of nature fit to take Marle, and of situation so near to Marl-pits long time opened, that they might be marled plentifully with little charge, and have been heretofore marled indeed, and yet the same to lie now unploughed, and not only barren of themselves; but also unapt for marle, & incapable of amendment by tillage: But I must say withall, That albeit the men in those former Ages had the right ordering of Marle, yet were they not all good Husbonds alike, neither doth the field joy alike under the Farmer, and under the very Owner of the same, the one seeking the very uttermost gain that may be made during his short interest, and the other endeavouring to perpetuate his commodity, even to the end of his estate, which hath no end at all: so that through unskilfulness of the one, and greediness in others, the ground may sooner be crammed to death with Marle, then it shall be made the fatter by it. The reason whereof I will reserve untill that I have cause to teach in particular

cular after what manner and measure the ground is to be marled. In the mean while I will open the nature and condition of this Wealdish ground, comparing it with the soil of the Shire at large, and afterward declare unto you what the Marle is, and what sorts thereof there be usually found in the Weald of *Kent*, and lastly enter into the true and profitable use thereof, as well in each sort of arable Land, as also for the increase of Corn and Pasture through the Kingdom.

The arable ground of this Weald hath commonly a fleet and shallow mould to be turned up by the Plough, so as in many places the dead earth or mould is within three inches of the face of the ground, and in the best places, the good mould exceedeth not six inches in depth at the most; and therefore it wanteth convenient substance to nourish Corn any long time, but will faint and give over after a crop or two; for the which reason also, it cannot yield any sweet or deep grass. Besides this, the Weald hath many copped or hilly grounds, out of which there do many Quits or Springs of water issue that make it cold and barren; and from these hillocks, the best part of the good mould is washed down into the Water-courses and Dikes that be made to divide and drain the Land. Furthermore, the Weald is divided into many small inclosures, the biggest sort (for the most part) of which, are between sixteen Acres and twelve in quantity, and thereby hath it many Hedges and Trees, which in unreasonable weather do keep both the Sun and Wind from the Corn, so as for want of that succour and comfort, it groweth, & many times rotteth in the earth, so that it earneth not nor careth, nor prospereth not kindly many times. And these small Cloſes are caused by this, that men are not able to marl any great part or quantity of ground at once; and having marled a little, they are desired to sow it with Corn; for the preservation whereof, as also for draining it, they are enforced to make so many and small severals: for all which reason it is plain, that there is little good arable Land there, and rarely any good Pasture, those only places excepted, which are amended by irrigations of floods, which there is called flowing and over-flowing. Contrariwise, the arable land of the Shire at large, hath a deep and fat

mould of good earth, that is able to bear five or six good Crops together, without intermission; and after three or four years rest, will do the like again, and may so interchangeably keep that course for ever: yea, there be many grounds that are sowed without ceasing, because the mould is so deep, that when the upper part thereof beginneth to faint and be weary, men can add some strength of Cattel, and with the Plough go deeper, and fetch up a fresh mould that will continue for a long season. Furthermore, this arable ground is a hollow dry ground for the most part on a deep Clay, that by tillage and the weather, will become dry and spongy, so as the rain there washeth in the fat of the earth, the rather because it is not so hillish and sliding as the Weald, but more level, even and champion also, by which the Sun and Wind do dry the Corn, and do make it earn or ear well, and yield a purer flower than that which is sobbed in wet, and hath a long time lien before it be dried again. But forasmuch as the great odds between these two sorts of grounds, may be made even by the help of *Marl*, if it be rightly ordered, as I said, I will shew you what it is, and how many sorts thereof be found in this Weald of our Countrey, *Marl* is indeed, as it is in name, the fat or (marrow) of the earth: for so did the *Germans*, and so did our elders the *Saxons* term it, of the word *Marize* which we found *Marrow*, and thereof we call it *Marling*, when we bestow that fat earth upon our lean ground. *Pliny* saith, that the *Britains* (meaning us) did use to amend their Land with a certain invention which they called *Murga*, that is, the fat of the earth, and it is to be seen in *Conradus Heresbachus*, that the *Germans* do use it to the same end, & do call it by the same name till this very day: it is therefore a fat, oylie and unctuous ground lying in the belly of the earth, which is of a warm and moist temperature, and so most fertil; seeing that heat and moisture be the father and mother of generation and growth; howbeit this is not a pure and simple marrow (as that which lieth in our bones) but a juyce or fat liquor mingled with the earth; as is the fat which lieth mixed and dispersed in our flesh, so as the one may be drawn away, and the other remain as it shall anon appear unto you.

Four sorts of
Marle.

Four sorts of *Marle* be found in this Weald, known asunder by the difference of colours, and thereby also differing in degrees of

of goodness one from the other: for there is a gray, a blew, a yellow, and red Marle, all which be profitable, if they be earthily and fat, or slippery as soap: and most times little worth, if they be mixed with sand, gravel, or stone. So the blew is reputed the best, the yellow the next, the gray the next, and the red less durable then the other three; and yet it is thought the red to be the better, if it be found upon the blew, or others. These Marls do lie in veins or flowers, amongst those hillocks or cropped grounds most commonly, whereof I have spoken, and do oftentimes shew themselves at the foot of the hill, or about the mid-way, between the foot and the top thereof: some of them have over them a cover of ground, which we call Cope, not exceeding seven or eight foot in depth, some lie deeper, and other some do arise, as namely, where the ground lieth not high, and the Marle commonly very good; and there is in diverse level grounds good Marle.

And as Marle is for the most part of these four colours, so is Four sorts of arable ground for the most part of these four sorts following; Ground.
that is to say, either a cold, stiff and wet clay which is either the Cope of the Marle, or lieth near unto it, and is therefore commonly called, *the Marle Cope ground*, or a Hazel Mould, which I count to be one of the Wealdish Moulds, being a compound Mould, and very good for Marle, and will quit the cost very well. Then there are two sorts of sandy Mould, the one being a reasonable good kind, but not equal to the Hazel Mould, For you shall have in divers places of the Weald, this Hazel Mould to bear two or three good crops of Wheat, being Summer fallowed together, which you shall hardly have of any sandy ground without mending: but as I said of the better sort of these two kinds of sandy moulds, you have commonly very rich Wheat, being well Marled, which is not so barren as the other; but this last kind of sandy Mould is a very barren kind of ground, and hath a very fleet Mould, and you shall have very Heath grow upon it in divers places, and yet being ordered, as followeth, with Marle, will bear both good Corn and Pasture. And now that we may the better understand how to Marle and Manure

E e e 2

every

every of these sorts by it self, you must know that the Hazel ground being dry, and not subject to Winter-springs, or tears of water, (for which, some call such, A whining or weeping ground) is to be hand'ed thus,

The ordering
of the Hazel-
Mould.

First, Plough it as deep as you can, with the strength of eight beasts at the least; and be not afraid to Plough up some part of the dead earth that lieth under the upper good Mould: for the Sun, the Rain, the Wind, and the Frost, will in time mellow and amend it; and besides that, the Mould will be the deeper for a long time after, and thereby keep it self the longer from being stiffened with the Marle. Then you may bestow 500 Cart-loads (as we call them) of Marle upon each Acre thereof, every load containing 10 or 12 bushels of eight gallons, and each Acre containing 160 rods of 16 foot and half to a rod. Then also you may chuse whether at the first breaking up you will sow it with Oats, to kill the grass, or else first Marl it, and sow it with Wheat, or otherwise Summer-fallow it in the May after the Oats, and then Marl it, and sow it with Wheat. Upon that fallow or gratten, (as we call it) you shall do well to sow it with Pease, and at Michaelmas following, to sow that Pease-stubble or gratten with Wheat again, which also will be the better, if the Summer wherein it carried Pease, were moist; because the Pease being rich and thick, to destroy the Grass; that together with the Washing of the fallows by rain, doth greatly consume the heart and vertue; or, as we call it, the state of the ground. But if that Summer were dry, then is a fallow best, because the Sun with his heat doth much good to the ground, and inableth it the better to bear out the weather in the Wheat sason ensuing. If you like to sow it, as I said, with Pease, sow them as early and timely as you may, for they will be so much the sooner harvesed, and then also you may Plough or stir your gratten the sooner, whereby it will be the better hardned to bear out the weather in the time of sowing of your Wheat: but I doubt, Pease doth somewhat stiffen it. Two bushels of Wheat do suffice for the sowing of an Acre hercof, except it be for the first crop, after the new breaking up

of

of the ground; during which time, there is found a Worm, called an *Emble*, which in *French* signifieth Corn in the ground, being of colour yellow, and of an inch in length, and will eat some part of the Corn; but if you sow it thick, it will be both small eared, and thick and slender of straw, which the Rain and wind will beat and hurl down, and then it will scarcely rise again; or if it do, yet through the nearness of the shadow of the Trees and Hedges, that in so small closes be many, it will rather rot for want of drying, then come to maturity, that is, to perfect hard, and full grown Corn. After your first Marling, you must carefully fore-see, that you plough not the ground either with deep or broad Furrows, but fleet and narrow, lest you cast your Marle into the dead mould; for Marle differeth much from Dung in this behalf; Dung spendeth it self upward, and howsoever deep it lie, the vertue thereof will ascend: but Marle (as saith Sir *Walter Henly*, in his Husbandry) sendeth his vertue downward, and must therefore be kept aloft, and may not be buried in any wise.

Furthermore, if your ground be Hilly or Coppied, it shall be fit that you make your Ridges 7. or 8. foot broad at the least; for in such falling Lands, the more broad Furrows you make, as you must make many, where you make Ridges, the more of your Marl shall be washed, and carried into the bottoms. It is good also to draw a cross or quarter-Furrow, and opening the ends of your Land-Furrows stopped, into it, to leave the other ends of your Furrows, that the Water-shoot run not all the length of the field.

Again, This ground will alwaies be sown under-furrow, and that also before *Michaelmas*, if the season will so permit; for this ground (if it be well husbanded) will be mellow and hollow, or loose, whereby through Rain and Frost, it would sink down from the root of the Wheat, if it should be sown above Furrow, the which being uncovered, must needs be bitten and killed with the cold.

It is also very fit that you harrow not this sort of ground too small, but that you leave the clods as big as a bowl, the which being mouldred with Snow and the Frost, will both cover and
keep

keep warm what is underneath. Moreover, it shall be good, that upon some fair and dry day, in the beginning of *March*, you put your Flock of Sheep into your Wheat, that with their trampling upon it, the Corn may be well, and fast closed with the Earth, yea, and presently after (if it will bear foot) you may roul it as you do Barley, whereby both the Clods shall be broken, and the Gratten or Stubble shall be more even and ready for the Mower. Generally you must understand, that after you have bestowed your Marle in the field, you ought to let it lie unspread abroad, untill you be ready to plough, and then immediately after the spreading of it, turn it into the ground with the Plough; for otherwise, if it should lie long spread in the field, the Sun will spend no small part of the fatness thereof, although I know many desire it, because it will be the smaller being burned with the Sun; which I like not. And therefore also no good Husband will carry and spend his dung in the time of Summer, except he do presently withall plough it into the ground; for although the mould of the arable Land it self will take good, if it be turned to the Sun, which will both dry and fasten it, yet the matter fareth far otherwise with the Marl, from which if the Sun shall draw and suck the fat moisture that maketh the Land fertil, more than becometh it (as *Columella* speaketh of the worst sort of ground) *Solum siccum, pariter & densum & marcum, quod siue excerceatur, siue cessat colono refugiendum est.* It becometh (saith he) a dry, thick, and lean Clod, which whether it be tilled or laid to rest, must be forsaken of the Husbandman as unprofitable. And now your Hazel mould being thus marled, plowed, sown, and manured, you may not charge with Wheat above twice, and then it must rest five or six years together; all which time it will bear a very good and sweet Pasture, will set with a white Clover, or three leaved grass, most batning and profitable both for Sheep and Bullocks.

After those years ended, it will grow to some Moss, or will peradventure cast up Broom; and then it is time to break it up, and sow and handle it as before, for two other Wheat-seasons or crops, leaving it a Wheat-gratten or stubble, rather than with an

Oat-

Oat-gratten or stubble, which burneth the Land being Marled. Being thus interchangeably sowed and rested, your Hazel mould will continue good Arable and Pasture, by the space of thirty years together; whereas if it should be continually sowed, six, or seven, or more years together without rest, it will become utterly unfruitful both for Corn and Cattel also. Neither will it any thing avail to Marle it over again, when it is so decayed, because the former Marl having his juyce exhausted by continual Tillage, whereof the Corn sucketh one part, and the Sun, Wind and Weather dry and wasteth the rest, is but a dead Clod (as I said) that is not capable of new Marl to amend it, nor casteth any profitable grasse at all. For proof hereof, I my self have seen, that the common Earth of High waies, by treading of Cattel, washing of Rain, and the drying of the Sun and Weather, lay separated from the natural juyce which it had in the pit, and spreading it upon the ground, I saw that the Land was not only not amended; but much the worse by it.

And now for an end of handling this sort of Hazel ground; If it shall appear unto you that five hundred Loads of Marl upon the Acre, have clanged, stiffened, and too fast bound your Land (as indeed the nature of Marl is to bind and to stiffen) then take you some of these waies to help it: Either rest it four or five years, or fodder upon it before you bring it up with so many Cattel as you may; or take the uppermost part of your Ditches or Fore-lands, or wast places of your fields which you may mingle with Dung, and which, before you sow your Wheat, you may lay upon your fallow, and stir it in with your plough; and by this you shall both loosen your Marl, and refresh your ground: so that within forty years the mould of your ground will cleane eat up and swallow the Marl that you lay upon it; and then become hungry, and is capable of Marl again as it was before at the first.

And by this also you may see the very cause for which it is good, not to sow your marled land continually, but to pasture it by turns, and so give it rest; namely, because the continual plowing doth exhaust and spend the fat of the Marl, leaving the drossie, dry, and fruitfull parts thereof, to lie and cover the face of
your

your ground: whereas Pasturage, through the dunging, treading, and foddering of Cattel, doth encrease a new mould, which mingling it self with the dead mould, doth in the end give some life and heart unto it. And therefore these Farmers and Owners that have been at the cost to marl their ground, and will not forbear to till it, but hastening to raise their charge, do thereby utterly strike it with barrenness, are like to *Aesop's* man, who having a Hen that layed him every day a golden Egg, and being greedy to have all the gold at once, did therefore kill the Hen, thinking to have found her belly full of gold, and so was both defrauded of that he looked for, and lost also what he had before. Hitherto of the nature, ordering and marling of this hazel ground. Generally now for the continual fallowing and stirring thereof, you must understand, it may neither be fallowed wet, lest it answer more Grass than Corn; nor yet so dry, that the dead bottom swell up, as in great drouth it will, and swallow the good mould that lieth above; and therefore bind not your self to any precise time of any Month, but the opportunity either in *May* or *June*, as you shall find the weather to have prepared it for your desire. In the like temper you ought to stir it after a shower, after *Saint James* his day, or in the end of *July*, for so will it be dry and hard before the time of sowing: where if it be stirred later, every small Rain will distemper it into Dirt or Mire, by reason of the tenderness thereof, and then can you not fitly bestow your seed upon it.

The ordering
of the Marle
Cope ground.

The Marle Cope ground followeth, which is most commonly (as I said) a stiff, wet, cold Clay, and not so fit as the former to be Marled for Corn, except in some few fleet places thereof, but yet it may serve for Pasture or for Oates; such of them as be marled, must be fallowed fleet or shallow, lest the *Marle* become drowned in the wet: then being marled, they may in dry Summers, and not over moist Countries) bear Wheat in some mediocrity. Three hundred Loads at the most of *Marle* are sufficient for an Acre of this kind, and two bushels and a half of Wheat will sow the same, which must be cast above furrow, fourteen or twenty daies before *Michaelmas*. It requireth, round, high and narrow Ridges, and that the

the water furrows be stricken somewhat deep, the better to convey moisture from the Corn, and that it be left cloddy as much as may be: and yet to say the truth, such as will convert this sort of ground to Tillage, must provide a greater quantity of rich ground or Greet (as we term it) and Dung, than of Marle it self, to amend this Land withall. But if there be any ground that is light and whining, or weeping, because of Springs that are therein, and therewith doth cast up Rushes, let that be marled upon the green Land with four or five hundred Loads upon the Acre, about the latter end of Summer; for so will the Marle sink into it, and cast up a sweet grass for eight or ten years together, and until that the Marle be sunk so low, that another sward or crust of Earth be grown over it and then it is fit time to plow it, but yet very fleet and narrow, for so will it bear good Oats; but if it be so so wet that you cannot adventure to sow your Wheat upon it, because the Rushes be not killed with this first plowing, then may you sow it again with Oats, drawing good water-furrows to drain it, because it will be the better for plowing, and thereby the Marle also will the sooner lose his force; thus doing, let it lie to pasture again.

There be some other Grounds of the Marle Cope, which carry a four Grass, and the Dyers-weed, (commonly called Greening weed) and having a great tore thereof, the which also may be amended by three or four hundred load of Marle upon the Acre of the green Land: for the Marle will both rot the tore or vesture thereof, and also enrich the Mould very much; so as it will answer good pasture twelve years after: and when you shall perceive that the Marle is well sunk, then may it be Ploughed fleet and narrow, sowed with Oats and fallowed; so may it both beat good Wheat if it find a good season, and be the richer a long time after, partly by the benefit of the Marle, partly by the rotting of the tore and sward, and partly by the dung and water of the Cattel that pasture upon it: for the sweeter the Pasture is, the more Beasts it feedeth; and the more Beasts it beareth, the more it self is amended by it.

Touching the fallowing of this ground, great heed is required; for as it swelleth more than the Hazel-ground, if it be taken hard

and dry, so it is more grassie then that, or the Sandy Soil if you fallow it wet: The season therefore followeth commonly in *April*, or in the beginning of *May*, for to fallow it, and to stir it about *Midsummer*, or so soon after as the Rain shall have prepared it meet for your unshod Oxen to labour upon it. Many men fearing to hit the right season for this ground in the Spring of the year, do make it ready by a Winter fallow before *Christmas*, and by stirring it before *Minsummer*, if they may; which manner is not to be misliked.

The ordering
of the Sandy
moulds.

Lastly, cometh the two sorts of Sandy-ground, and gravelly mould, the one being to be ordered much after the hazel mould, saving he would have somewhat more *Marle*, and also would be favoured more in the often tillage, than it: for the hazel mould will bear or endure more than the Sand. But this last sort of sandy ground, being a very staring sand (as we use to call it) for much of it will bear Heath, being of it self very barren and very fleet or shallow mould, and over-hot and dry, and by reason of that extremity, is unfertile except it be marled very plentifully. And therefore when you break up this ground, Plough it as deep as you may, not fearing to cast down the best Mould thereof, because the *Marle* will pierce thorow, and sink down into it. An Acre of this ground requireth five or six hundred loads of your *Marle* at the least. So alwaies under furrow about *Michaelmas* with two bushels and a half upon the Acre, which it will better carry than the Hazel ground: for although the straw be small, yet will it be harder, and stand better than that of the other. The Worm whereof I spake, will be busie with that that groweth on this sort of ground, until that the heat thereof be somewhat asswaged by the *Marle*. If your ground be hilly, make your Water furrows in such sort as I have said before, for the saving both of your *Marle* and Mould, harrow it very little, leave it as cloddy as you may. After that you have taken a Crop from it, fallow that Wheat Gratten or Stubble in *May*, after that stir it also, and then about *Michaelmas* sow it with Wheat again: for it is not yet rich enough to bear you good Pease. This done, let it rest four or five years, and if it send up any plenty of Broom, cut

or

or pull them when they be of some mean bigness, but plough not the ground until it have taken such rest; and after it, you may well break it up of new, and sow it with Oats: which Oats-gratten or Stubble, you must Summer-fallow, when it is at the Harvest: and then if you desire to have it in good heart, you must Marle it with three hundred or four hundred loads upon the Acre again. After this Crop thus taken, rest it five or six years, and then take one Crop more of Oats from it, and after a Summer-fallow, sow it with Wheat, and suffer it to lie a Wheat Gratten or Stubble, till it shall have rested as before is appointed for the hazel ground; and so it will be the better thirty or forty years after the marling. We have in this Weald a sandy and gravelly ground that is wet and weeping, the which is scarcely worth the marling, except the nearness of the *Marle*, (and thereby the small cost and charge thereof,) may intice a man to bestow the cost upon it with *Marle*, and then the best way is to Marle upon the green Land, or upon a fallow, with 500 Loads or more upon the Acre, or rather to take the profit thereof by Pasture then by Tillage: for it will hardly bear good Corn, which is soon killed with wet vapour that is continually sent up from the wet springs that lie under it. This sort of wet ground is to be fallowed, when it is both hard and dry, because it swelleth not as doth the hazel Mould, and may therefore be taken in *June*, if former fair Weather bring it not to a dry season; and it is to be stirred also after a showre, in the like plight as the hazel mould before. Your Marlable grounds being ordered in this wise, severally set down for each kind of them, will continually stand fruitful either for Corn or Pasture, and albeit the high prices which Corn hath of late years carried may allure some men to sow Corn incessantly, and thereby to spend their *Marle*, and to choak their Arable in the end; yet I doubt not but the wiser sort can see that it is much better to maintain their Grounds hearty and in good plight for ever, then to raise a short gain, that will bring a long and perpetual loss upon them: The rather also, because that Butter, Cheese, and the flesh of Beef and Mutton be advanced in price equally, if not beyond Wheat, Rye, Barley and the other grains. Howbeit, a good Husband will make his profit of them

both: for if he have one hundred, or one hundred and twenty Acres of this Wealdish Arable, he will so *Marle* and manure them, that dividing his Land into five or six equal parts, he may continually plough twenty, or five and twenty Acres for Corn, and yet lay to pasture the rest by turns, so that by the help of his *Marle* his Land shall be continually rich and profitable, both in the one and other of them.

And thus I have spoken of the Weald, describing the nature and property thereof: so may every man of discretion and judgment, which shall meet with earth of the same quality and condition (in what part of this Kingdom soever) make application of these Rules before rehearsed, and no doubt but the profit will make both the labour and cost profitable and pleasant.

THE

The several Wayes, according to the

Opinion of Writers, and the certain Wayes, according to the Experience of Husbandmen, for the destruction of Moals, or Moles which digg and root up the Earth, how to reduce and bring the ground to the first goodnes, having been spoiled by them.

IT is needless either to describe the nature and quality of this Vermin, or the injury and hurt which they do the Husbandmen, Gardiner, and Planter, since no County is exempt from their annoyance: but touching the Remedies, they are of greater secrecie, and therefore I thought good in this place to insert them.

The ancient Writers are of divers Opinions touching the manner of destroying this Creature, and therefore have left unto us sundry medicines how to work the same; amongst the which one writeth as an approved Experiment, That if you take Walnuthshels, and fill them with Brimstone, Chaff, and Petroſin, and then setting them on fire, put them in holes or trenches, through which the Moal passeth, the very smel or stinch thereof will poyson them; so that if you digg you shall find them dead in their holes.

Another affirmeth, That if you take Brimstone, and rank stinking Litter of Horses, and burn it in the holes or haunts of the *Moals*, it also will impoyson them, so as you shall find they will come out of their Caves, and lie dead upon the green grass.

A third affirms, That if you take green Leeks Garlick or Onions, and chopping them grossly, thrust it in the holes, the very ſume or savour thereof will so astonish and amaze the *Moals*, that they will presently forsake the Earth, and falling into a Trance, you may take them up with your hands. Now there is not any of these Medicines which can be dis-allowed, for there is no doubt but that they will work the effects spoken of, if the *Moal* can be brought to take a full scent thereof; but it is a Vermine curious of scent, and passing quick of hearing, and being in a spacious ground, will prevent these baits: and therefore they are rather to be applied for Gardens or little Grounds, where there is but a Moal or two, then in large fields, where there be many hundreds.

To conclude, for this matter of Medicines, or for the helping of Gardens, Hop-yards, or any small spot of Ground, there is not any thing held more available, than to sow in that place the herb called *Palma Christi*; for it is found by certain experience, that wheresoever that herb groweth naturally of it self, or otherwise is either purposely sown or planted there in no wise will any Mole abide.

Thus much I thought good to shew you for the use of Medicine, and for clearing of small grounds: Now for the annoyances which happen to great, large and spacious fields, through the multitude of Moles, there is only three absolute waies for the curing of the same.

The first is, in the months of *March* and *April*, to view where they cast, and go about to make an extraordinary great Hill, in which they build their nests, which is known by the newness of the Mould; then look for the new trench which leadeth to the same; for as she goeth she returneth: then with your Mole-spade open the trench in divers places, and then very still and silent, observing to take the Wind, to prevent both hearing and smelling, watch the Mole as she goeth or returneth, which is Morning, Noon, and Evening; and as soon as you see her cast, strike her with your Mole-Spear made of many sharp pikes, and so cast her up, and kill her. Thus have I seen by one man an hundred destroyed in one day.

The next infallible way for the destruction of Moles is, If you can by any possible means bring in water to over-flow and wash your ground, and as soon as the earth is wet over, the Moles will come forth of themselves, and you may gather them up with your hands at pleasure.

The last (indeed as much approved as any) is to take a live Mole in the month of *March*, which is their bucking or ingendring time, and put it into a deep brass Bason, or other deep smooth Vessel, out of which the Mole cannot creep; and then at Evening bury it in the earth up to the brim, and so leave it, and the imprisoned Mole will presently begin to shriek, complain, or call, so that all the Moles in the ground will come to it, and tumbling into the Vessel, they are prisoners also; and the more prisoners, the greater will be the noise; and the more noise, the
more

more *Moles* will come to the rescue : so that I have seen 50 or 60 taken in one night, and in one vessel or brass Kettle,

Now having thus learned how to destroy the *Moles*, it is meet you also know how to prevent the coming in of foreign *Moles*; because though you keep your ground never so clean, yet if your next Neighbour be an ill-husband, his field may soon impoyson yours again : therefore to prevent the coming in of any foreign *Mole*, make but little Furrows or Trenches about your ground, and scatter in them small round Balls made of Hemp-seed, or Hemp-seed and *Palme Christi* beaten together, and you shall not need to fear the coming in of any Neighbouring *Moles*; how many soever there be about you.

Lastly, for the reducing or bringing the ground to the first perfection again (for howsoever some Husbandmen say, Moe *Mole-hills*, moe ground; yet 'tis certain, that moe *Mole-hills*, less good ground) for never was yet sweet grass seen on a *Mole-hill*; therefore to bring it to perfection, which I mean to be meadow-ground, or ground-to-be-mown, which *Mole-hills* cannot be, you shall first with a sharp paring-shovel, pare off the swarth about three fingers-deep, for fear of hurting the roots of the grass; and then the swarth taken off, digg away the rest of the Mould, and scatter it as small as you can round about the Hill, then take the green swarth and cutting it artificially, lay it close and fast, and level, where you took away the mould, as if there had never been Hill there : and thus do to all your Hills, though they be never so innumerable; and after all your ground is levelled, as soon as the first showr fallen, run all your ground over with a pair of back Harrows; or an Harrow made of a Thorn bush, and it will break the mould as small as ashes, which will so comfort and refresh the root of the grass, that it will grow in infinite abundance; and sowness which was caused by reason of the Hills, will come again to a perfect sweetness, and the meadow will be more fruitful than before by many degrees. And thus much for the destruction of *Moles*; and the reducing of the Earth to his first goodness.

